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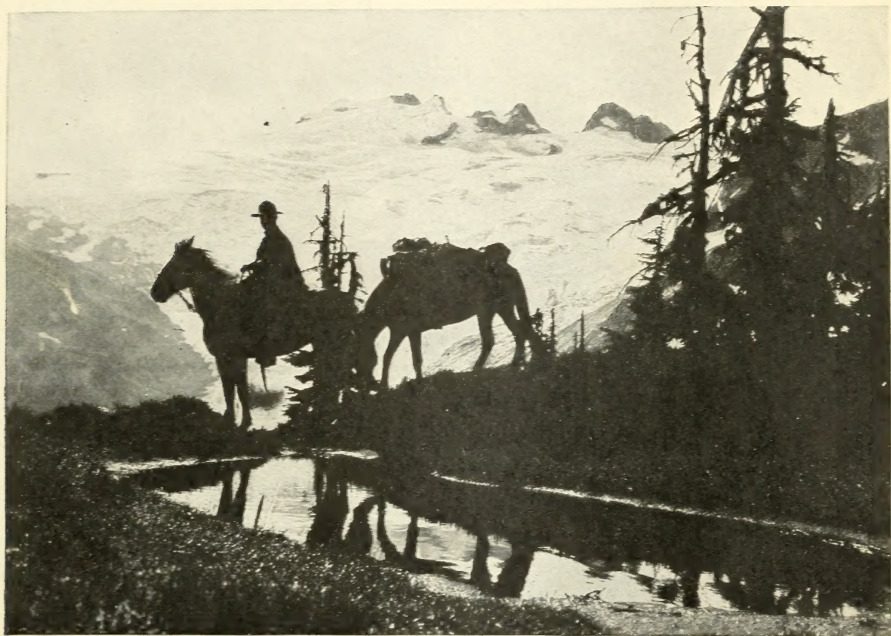


# IN THE OPEN

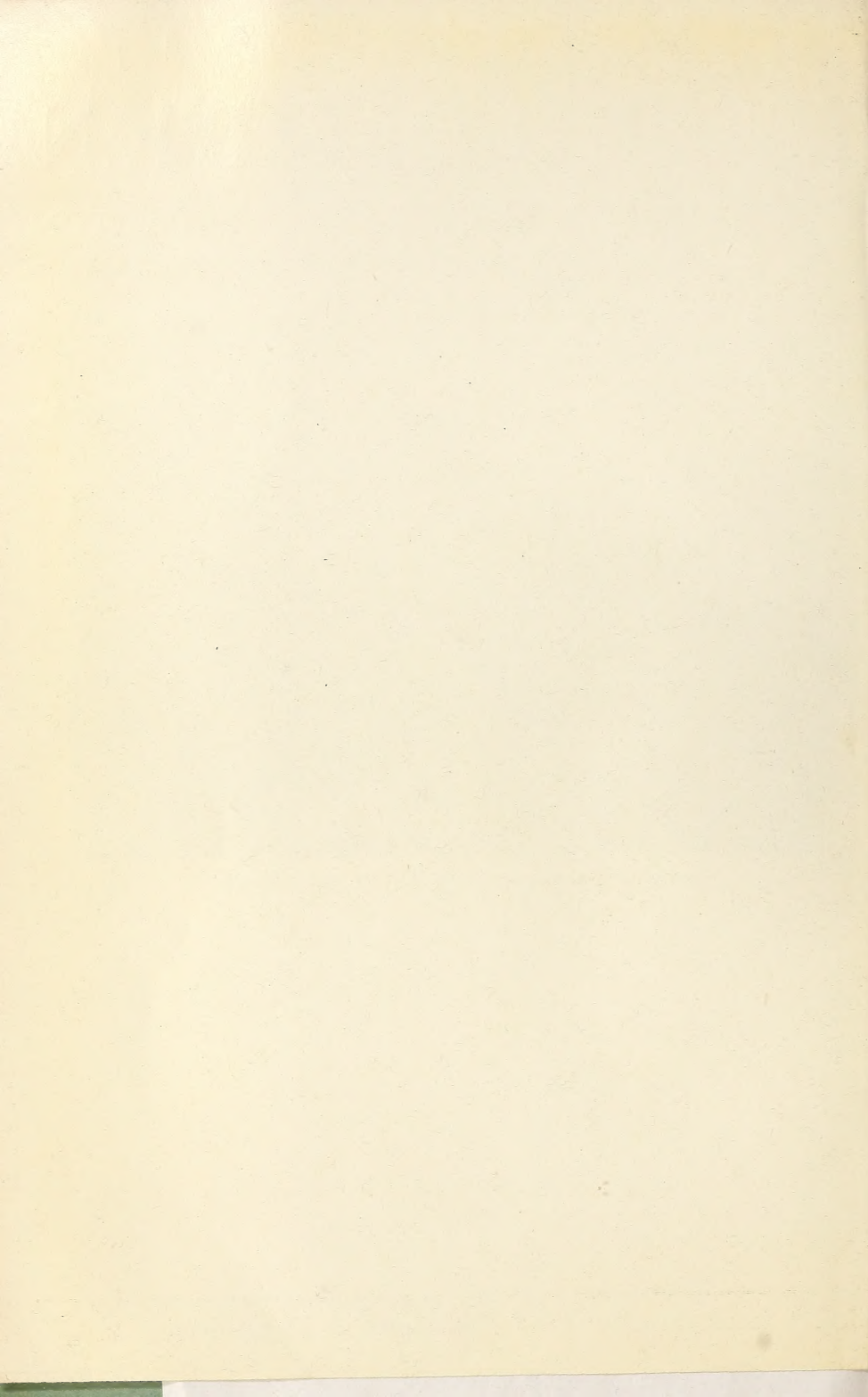
THE NATIONAL FORESTS OF WASHINGTON

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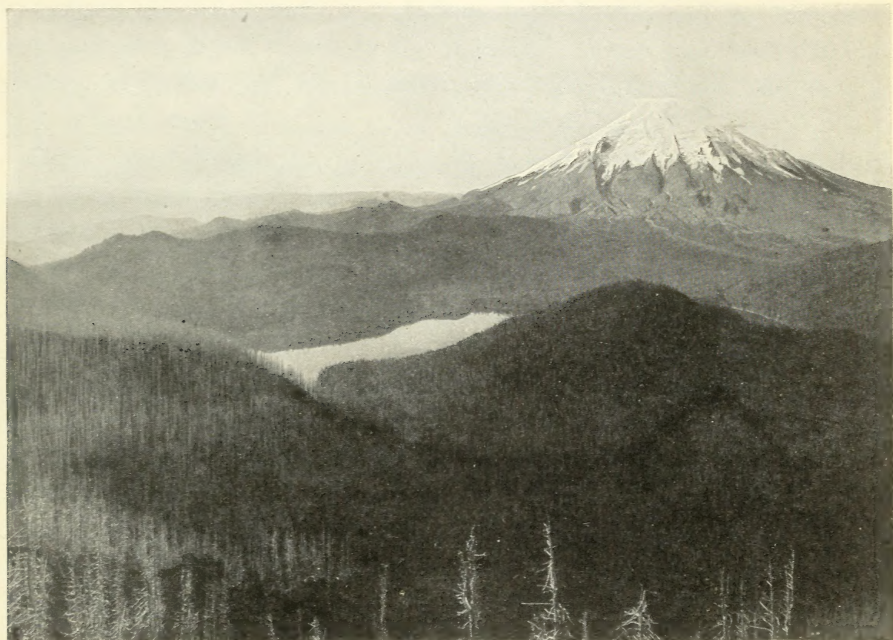


AT WHATCOM PASS—WASHINGTON NATIONAL FOREST





WELCOME  
TO  
THE NATIONAL FORESTS



SPIRIT LAKE—COLUMBIA NATIONAL FOREST

U. S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

DEPARTMENT CIRCULAR 138

Contribution from the Forest Service

W. B. GREELEY, *Forester.*

DIRECTORY OF NATIONAL FORESTS IN WASHINGTON.

GEORGE H. CECIL, District Forester

District Office, Post Office Building, Portland, Oreg.

NATIONAL FOREST.	FOREST SUPERVISOR.	HEADQUARTERS.
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	{ G. E. Mitchell .....	Chelan, Wash.
Columbia .....	F. H. Brundage * .....	Portland, Oreg.
Colville .....	C. C. Reid .....	Republic, Wash.
Okanogan .....	P. T. Harris .....	Okanogan, Wash.
Olympic .....	{ Rudo L. Fromme* .....	} Olympia, Wash.
	{ O. F. Erickson .....	
Rainier .....	G. F. Allen .....	Tacoma, Wash.
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Wenatchee .....	A. H. Sylvester .....	Wenatchee, Oreg.

\* District Forest Inspector.



# IN THE OPEN

## THE NATIONAL FORESTS OF WASHINGTON

THE woods, rivers, and lakes, the alpine meadows, snow fields, and lofty peaks of the National Forests in Washington are an invitation and a challenge to the lover of the outdoors. Fish in the waters, big game in the back country, snow-covered peaks and glaciers at the top of the divides, and fine scenery everywhere, offer sport in abundance to the angler, the hunter, the mountain climber, the tourist, the hiker, and the camper—to everyone, in fact, who likes to take his recreation in the open.

The National Forests are the refuge of most of the remaining big game of the State. Deer, bear, cougar, cats, and coyotes are found on practically all the Forests. There are elk on the Olympic and Rainier and mountain goats along the Cascade Range, on the Washington, Chelan, Snoqualmie, Wenatchee, Rainier, and Columbia National Forests. Grouse are common on all the Forests, and in a few instances duck hunting is possible.

For the merciful hunter who shoots his game with the camera there is no closed season on any of these animals or birds. This to many is the ideal method of hunting, since the pictures of wild life thus obtained are evidences of great skill and cunning, and call up memories of happy days in camp and on the trail.

For those who hunt to kill, the State game laws, which are operative inside as well as outside the National Forests, regulate the amount of game that may be taken and the season when it may be hunted; and it is one of the duties of every Forest officer to cooperate with the State and county officials in seeing that these laws are observed, to the end that the game resources of the State may be preserved through wise use.

Well-located and carefully constructed highways, built in accordance with a definite road program, make it easy for automobiles to reach any of the National Forests of the State, and even to penetrate deeply into the wilderness. And beyond the roads many a trail leads high up to ridge and summit overlooking a tremendous expanse of magnificent scenery.

As fast as funds are available, National Forest roads and trails are being posted with signs to guide the visitor. These signs are of wood, painted white or cream with lettering in dark green or black and they bear in addition to the lettering a shield, in the middle of which is a pine tree and the letters "U S" with the words "Forest Service" above and "Department of Agriculture" beneath it. This shield is a reproduction of the badge worn by all rangers and other Forest officers, by which they may be identified.

Roads, trails, signboards, and maps make it easy to get about the Forests without any other guide. More than 4,000 miles of trail are kept open on the National Forests of Washington and are available for public use. Sixteen hundred miles of telephone lines make quick communication with the outside world possible. In an emergency, the Forest traveler can call up his family or office in town from some ranger station in the heart of the wilderness. Registers are kept at local Forest headquarters, where the visitor may write his name and indicate his probable route of travel. This will make it possible for a Forest officer to find him in case of the receipt of important messages.

The Forest Service has begun the development of camp and picnic grounds on suitable sites along the roads leading through the National Forests, clearing up camping grounds, and providing safe places for building camp fires and other simple conveniences. Forage for saddle animals and firewood are free.

There is something about life in the open that appeals strongly to the seeker after health and recreation. Even a few days spent out in Nature's wide spaces takes the mind from the vexatious daily problems and gives a broader outlook on life and its possibilities. Forests, streams, and mountains furnish a rugged companionship never known in town. The establishment of the National Forests secures for the people widespread areas on which no "Keep Out" signs prevent enjoyment of the natural attractions. These Forests belong to the people and those who use them are simply reaping the benefits of ownership. Millions are making use of their Forests every year—touring and tramping through them by road and trail, exploring their mountain fastnesses, and eagerly searching out their hidden nooks and canyons. You will find them camped by the quiet lakes and beside the singing streams and booming waterfalls. They are wearing trails to the lonely summits, where the most inspiring views may be obtained. And there is none to



warn them to keep off. Signs put up by the Forest Service guide them along the trails, and the Forest rangers they meet are familiar with the region and are glad to be of service to visitors. They direct them to the best places to fish, camp, hunt, hike, or take pictures, and ask in return only cooperation in preventing forest fires and in keeping camp grounds sanitary and attractive.

Maps and detailed information on any particular National Forest may be had on application to the District Forester, Post Office Building, Portland, Oreg., or to the supervisor of any Forest.

If you wish to build a permanent summer home you may lease a site for a term of years at a reasonable annual rental. A permit to occupy such a site may cost as little as \$5 a year, and seldom more than \$25. Your summer home may be a cabin, a cottage, or something more pretentious, as you wish. The only restrictions are that the building must not be unsightly, and that the grounds must be kept in a neat and sanitary condition.

The use of the National Forests for recreation and health by larger numbers of people each year increases the danger of forest fires; this liability will become an asset just as soon as each individual Forest visitor is careful with his own fire and keeps on the lookout for fires left by others.

## CAMPERS HELP PROTECT THE FOREST

THE service performed each year by tourists and campers in finding and putting out small fires before they have time to spread, reporting fires which they can not control, and giving voluntary help in fighting larger fires can not be estimated.

Still more effective service will be rendered when each Forest visitor personally uses the greatest caution in locating, building, and putting out camp fires. Smokers may help by carefully putting out stubs and being absolutely sure each match is out before throwing it down.

Most persons who visit the Forests are careful in their use of fire; but a small proportion are not careful, and about one-third of the total number of fires on the National Forests originate from their inexperience or carelessness. Observance of the following rules will reduce the number of forest fires materially and save annually Forest resources worth millions of dollars.

## SEVEN TESTED RULES FOR PREVENTING FOREST FIRES

1. MATCHES.—Be sure your match is out. Put it in your pocket or break it in two before throwing it away. Make this a habit.
2. TOBACCO.—Throw pipe ashes and cigar or cigarette stubs in the dust of the road, and stamp or pinch out the fire before leaving them. Do not throw them into brush, leaves, or needles.
3. LOCATION OF CAMP.—Select a spot as free as possible from inflammable material, sheltered from the wind, and near accessible water.
4. CAMP FIRES.—Never build a camp fire against a tree or log, in leaf mold, or in rotten wood. Build all fires away from overhanging branches and on a dirt or rock foundation. Dig out all rotten wood or leaf mold from the fire pit, and scrape away all inflammable material within a radius of from 3 to 5 feet. Make sure the fire can not spread on or under the ground or up the moss or bark of a tree while you are in camp, and that it is going to be easy to put out when you are ready to leave.
5. LEAVING CAMP.—Never leave a camp fire, even for a short time, without *completely extinguishing every spark* with water or fresh dirt free from moss and leaf mold. Do not throw charred cross logs to one side where a smoldering spark might catch. It is well to soak thoroughly all embers and charred pieces of wood and then cover them with dirt. Feel around the outer edge of the fire pit to make sure no fire is smoldering in charred roots or leaf mold. Hundreds of fires escape each year after campers have thought they were extinguished.
6. TRY TO PUT OUT ANY FIRE THAT YOU FIND.—If you can not put it out, get word to the nearest Forest officer as quickly as possible. Every minute saved in reaching the fire is of vital importance.
7. HELP ENFORCE THE FIRE LAWS.—They were made to protect your interests.

## CHELAN NATIONAL FOREST

THE Chelan National Forest, with famous Lake Chelan, lies in north-central Washington, on the watershed of the Chelan and Entiat Rivers, which flow southeasterly into the Columbia. Lovers of wild mountain scenery visit this Forest by thousands every year. Of Lake Chelan a landscape engineer has written:

If one had the wildest fjord of Norway brought inland and filled with sweet and quiet waters, or if one had Lake Brienz of Switzerland extended to a length of 50 miles, one would have a possible competitor for Lake Chelan; but until such improvements in terrestrial topography can be made this lake is unique. It is, in short, and without exaggeration or qualification, one of the best landscapes in the world.

Lake Chelan occupies 49 miles of an ancient glacial valley, and the Stehekin River flows into it, passing through a continuation of the same valley for about 25 miles. The Cascade, Sawtooth, and Chelan Ranges, which surround the lake, rise to





Lyman Lake Hanging Glacier—Chelan National Forest



Agnes Creek trail—Chelan National Forest

a general elevation of 8,000 feet, with many peaks higher. The level of the lake is 1,079 feet above the sea. The valley is from 10 to 18 miles in width. The combination of these features results in a canyon narrower than the Grand Canyon of the Colorado, and nearly a mile and a half deep. The rugged granite mountains have been carved by the ice into bold cliffs and peaks.

The bottom of Lake Chelan is in places more than 500 feet below sea level, and its water is cold, which perhaps accounts for the game qualities of its fish—steelhead, cut-throat, rainbow, and lake trout, and a good many Dolly Vardens. Fishing in the lake is best in June and July, the time when fly fishing in the smaller streams and lakes begins to draw most of the anglers. Two hatcheries in the region keep the streams well stocked. There are mule deer and mountain goats, black bear, and grouse, but the country is too rough for comfortable hunting, and this has aided in protecting the game. Boating, camping, fishing, and scenery are the main attractions.



The larger streams have their sources in the 60 or 70 glaciers and more than 30 lakes that are among the features of the region. The upper courses of these streams are often through wooded or grassy basins, from which they issue in a series of cascades and waterfalls.

Good automobile roads give access to the lower end of Lake Chelan, from the Sunset Highway and the Yellowstone Trail by Blewett Pass and Wenatchee. The new suspension bridge (Beebe Bridge) crossing the Columbia River at Chelan Station, 4 miles from Chelan, offers a convenient way of getting to the lake. Several roads from Spokane, which cross the Columbia either at Wenatchee Bridge or Orondo Ferry, lead indirectly to Lake Chelan.

Visitors who go by rail leave the main line of the Great Northern at Wenatchee or Oroville and take a branch road to Chelan Station. The 4 miles to the lake is by stage. Daily boats from Chelan, at the foot of the lake, carry tourists to all up-lake points and deliver mail and supplies. Guides and packers with pack trains may be secured at Lucerne (at the mouth of Railroad Creek) and at Stehekin (at the head of the lake). Hotel accommodations may be found at Chelan, Moore Point, Lucerne, and Stehekin.

Most visitors stay at the hotels or in some of the many camping places along the lake. The best camps are on the bars at the mouth of the streams, where an abundance of wood and water and level ground makes camping easy. The best fishing is also at the mouths of the streams. Big Creek, Twin Harbor, Bear Creek, Prince Creek, Railroad Creek, and Riddle Creek have large summer colonies. There are many other good camps, principally along the southwest shore.

Many campers prefer the Stehekin River Valley, which is reached by a road starting at Stehekin and extending 16 miles up the river. In late August and early September huckleberry picking and bear hunting attract many travelers to this region. During the season stages meet the boat and carry tourists and campers to Beartrap Springs, Agnes, Bullion, or Bridge Creek. Camping spots may be found almost anywhere along the stream. The road ends at Bridge Creek, which is the center of some of the best fishing and scenery in the Forest and convenient to large huckleberry patches.

Campers in the Lake Chelan region miss a great deal if they do not make a trip into the upper country. The best way is with a pack outfit. The 22-mile trip



Cut-throat trout caught at the head of Lake Chelan—Chelan National Forest

from Lucerne to the head of Railroad Creek furnishes good fishing all the way, with plenty of camping places, of which Ten Mile, Hart Lake, and Lyman Lake are the best. Special attractions are the Lyman Glacier (a body of ice  $1\frac{1}{2}$  miles long by a mile wide) and Bonanza Mountain, 9,500 feet high and the tallest peak in Chelan County. The trail is excellent for a large part of the way, and makes Lyman one of the most accessible glaciers in America. The wonderful landscape which greets the traveler in Cloudy Pass includes Glacier Peak, with Mount Rainier 100 miles farther south, and the intervening summit of the Cascades. The return trip may be made by way of Agnes Creek and Stehekin. Three days are sufficient for this trip, but the wise traveler allows five or six.

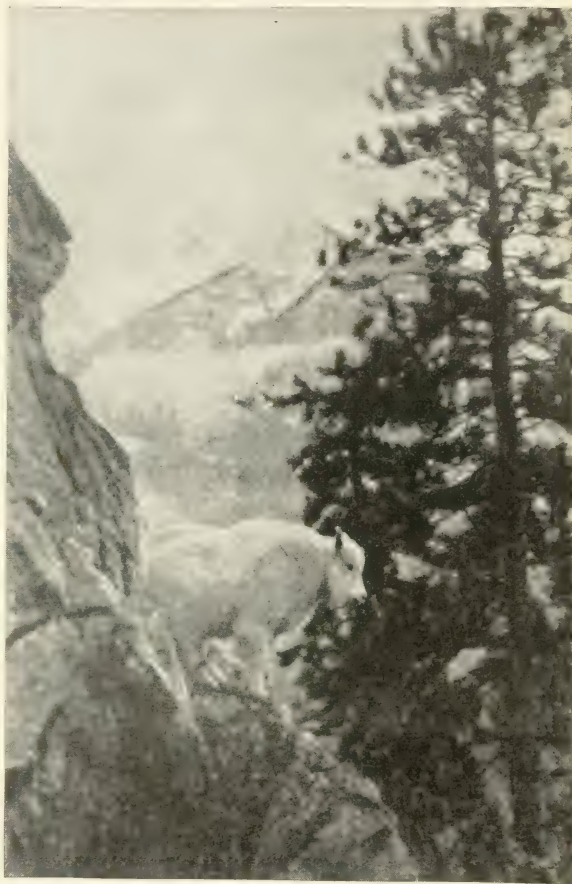
From Stehekin a number of good trips are possible, varying in length from part of a day to several days. War Creek Pass offers a worth-while one-day trip, as does also the trip to Agnes Creek and return. Two days should be given to the Rainbow Creek trip. Most tourists visit Rainbow Falls and the State hatchery, a short distance from the falls, which are about 3 miles from Stehekin.

Tourists bound for Bridge Creek Camp by wagon should allow a day for the trip from Stehekin. There are many delightful foot or pack-horse trips, starting at Bridge Creek Camp. A two-day trip to Doubtful Lake, above Cascade Pass,

where one can look down on the Olympics and Puget Sound in clear weather, is specially recommended. Side trips may be taken from Horseshoe Basin (a great amphitheater of the main range) to Thunder Creek Glacier, at the head of Park Creek. There are good camps at Cottonwood, Park Creek, and the upper and lower Park Creek meadows, in the upper basin. Three miles east of Bridge Creek is the glacial valley of the North Fork, 10 miles long, surrounded by peaks running up to 9,300 feet in elevation, and with a number of hanging glaciers along the west side. There are good camps at frequent intervals and plenty of huckleberries in season.

Falls at the mouth of the North Fork have kept out the fish, but fishing in the main stream from the North Fork up is excellent. Twisp, State, and Rainy Passes afford very pleasant camping places, with remarkable scenery. The fishing, which is good all the way up the stream, culminates at Rainy Lake. The game trout swarm around the mouth of the creek emptying into the lake from the great glacier on the south bank. This trip can be taken from Stehekin in four or five days, but to get its real benefits a week or ten days should be devoted to it.

Most of the important valleys along Lake Chelan have fair trails leading into them and offer many excellent trips. However, it is not always convenient to get horses and guides to go into the country south of Railroad Creek.



Mountain goat—Chelan National Forest



Entiat Valley, which opens into the Columbia Valley at Entiat, parallels Lake Chelan and offers excellent outing opportunities for visitors. A road passable for automobiles extends 30 miles up the Entiat. The best camps are on the last 5 miles of the river road. The one at Silver Creek, at the end of the road, is popular. Trips into Entiat Valley usually outfit at Entiat, where horses can be hired. Mad Lake, the Entiat Glacier, and the picturesque heights on both sides of the valley are readily accessible, and fishing in the river and many of its tributaries is good.

The Forest Service has surveyed several groups of summer home sites at various points along Lake Chelan, where lots may be leased at from \$10 to \$15 a year. The Forest Supervisor, at Okanogan, Wash., or the Deputy Supervisor at Chelan will be glad to answer any inquiries about summer home permits or give information concerning routes and arrangements for camping trips. District rangers are located at Chelan, Stehekin, and Stelik Ranger Stations.

## COLUMBIA NATIONAL FOREST

THE Columbia National Forest lies in the southern part of the State and extends from the Columbia River northward to the Cispus River and from Mount Adams westward to Mount St. Helens. It lies on both sides of the Cascade Range.

A system of roads and trails, with a total length of 534 miles, gives easy access to points of special interest within the Forest. Forest travelers unfamiliar with the country will have little difficulty in finding their way, because there are signboards along trails and at important trail intersections.

Game is fairly abundant, and the well-stocked streams and lakes furnish excellent sport for the angler during the open season.

The outfitting points for the eastern side of the Forest are Guler and Trout Lake, Wash., about 26 miles north of White Salmon, the nearest railroad point. An automobile stage, daily except Sunday, connects White Salmon with Guler. Automobiles for special trips can also be obtained at Guler. Not only hotel accommodations, but also saddle horses, pack horses, packers, and guides usually may be secured at Guler.

The base of Mount Adams is 12 miles north. This notable peak has an elevation of 12,307 feet and its summit is crowned with perpetual snow, while extensive glaciers hold its upper slopes in their icy fingers. These glaciers present great





Spirit Lake—Columbia National Forest

variety and individuality. Some are very steep and broken, others steep and smooth, and still others are not only smooth, but have an easy grade. The Klickitat Precipice, on the east side of the mountain, almost perpendicular and nearly a mile high by 4 to 5 miles long, is a striking natural phenomenon with its face of glistening ice and varicolored rocks.

Bird Creek Meadows, embracing about 3,000 acres, is a most delightful mountain park and makes an ideal place for camping. Among its attractions are grassy glades, highly colored alpine flowers, groves of evergreen trees, snow-fed streams, numerous waterfalls, and a dozen small mountain lakes.

The series of lava caves accessible from Guler by automobile is of considerable interest to tourists. One of these caves, 7 miles west of Guler, is so well protected from summer heat that it contains ice during the entire season.

The extensive huckleberry patches, reaching from South Prairie northward to Dead Horse and westward to the Racetrack and Twin Buttes countries, attract many visitors during August and September, who come for the combined purposes of picking berries and enjoying a vacation in the mountains. A lava bed, 10 miles

long and from 1 to 5 miles wide, in the vicinity of Indian Racetrack, extends east to Goose Lake and south to Lava Creek and South Prairie. Forest growth is already changing this from a desolate barren into a timber-producing area of much beauty. In the smooth lava near Goose Lake there are distinct impressions of a pair of human hands and feet, which have caused considerable conjecture as to their origin. It is the opinion of scientists who recently visited the region that these impressions were cut in the lava by some Indian medicine man.

An interesting 10-day trip starts at Guler and carries the traveler by way of Mount Adams and the Cispus River divide to Mount St. Helens, through the beautiful Nigger Head and Blue Lake countries, where excellent camping places and abundant forage for horses can be found. The view from Craggy Peak (north of Blue Lake, and fairly easy to climb) is well worth the effort it requires.

Return may be made by way of the Spirit Lake—Guler Trail, which passes through some splendid stands of timber and also crosses the Lewis River burn, where the effects of fire on the forests are very apparent.

The Forest Service maintains a forest nursery and experiment station 10 miles up Wind River Valley from Carson, Wash. Visitors have the opportunity of seeing millions of baby trees growing under cultivation. Just before planting season about 2,000,000 of these trees are taken up annually and shipped to planting areas on the various Forests of Washington and Oregon, where they are set out to restock areas on which fire has destroyed the natural tree growth.

Five miles further up Wind River are Government Mineral Springs and Soda Springs, which are accessible by automobile. Hotel accommodations are available at Government Springs. The water from these springs is pleasing to the taste and is credited with certain medicinal qualities. For persons who prefer to camp there are suitable camp grounds. Wind River, a short distance from the springs, provides fair fishing.

A number of interesting side trips may be taken from Government Springs. The trip to the falls of Falls Creek is perhaps the most popular. These falls have a total drop of about 250 feet and consist of a series of cascades and vertical falls. They are located about 5 miles from Government Springs and may be reached by a good trail. The timber near the springs is being logged, but areas immediately adjacent and fringes of timber along the streams are being reserved for scenic purposes.

The St. Helens country may be reached from Castle Rock, Wash., as an out-fitting point. A road 47 miles long, passable for automobiles, connects Castle Rock and Spirit Lake. This road is being improved by the Forest Service and Cowlitz County. At present there are no hotel accommodations at Spirit Lake, and tourists should take necessary provisions and camping equipment.

Spirit Lake lies at an altitude of 3,199 feet, about 3 miles north of the base of Mount St. Helens. The lake is 3 miles long and averages over one-half mile in width. It is famous as a fishing place. Here, on land occupied under special use permit, is the permanent camp of the Portland Y. M. C. A. Boys' Department. The Forest Service maintains a public camp ground on the south shore of the lake, where tourists and campers are always welcome. A heavy forest surrounds the lake. The Forest Service has surveyed 59 summer home sites along the south shore of the lake, which are open for leasing by the public at prices ranging from \$7.50 to \$10 a year, depending upon location. More definite information concerning these sites may be obtained from the District Ranger at Spirit Lake or by addressing the Forest Supervisor, Portland, Oreg.

Mount St. Helens, 9,671 feet high, is the youngest mountain in the Cascade Range. Because of its youth, its surface is smooth and its shape more symmetrical than those of the older peaks. Eruptions occurred as late as 1842, and at the present time there are fissures from which sufficient heat is exuded to cook rice overnight. On the summit is a fairly level area of about 50 acres. This mountain is most easily climbed from the southern side, but no great obstacles are encountered in ascending from the north. Persons not accustomed to mountain climbing should not attempt it without a guide. The glaciers of Mount St. Helens (noted for their cleanness and their crevasses) and the wells and caves are features which draw an increasing number of visitors each year. Lava flows containing enormous caves occur on the southwestern side. Almost perfect casts of trees and logs are also found in the stone. These lava flows are most easily reached from Woodland, Wash. An automobile road up the Lewis River makes travel possible to within 1 mile of the most interesting features.

The supervisor's headquarters is in the Post Office Building, Portland, Oreg., and district rangers are located at Stabler, Guler, and Spirit Lake.

## COLVILLE NATIONAL FOREST

THE Colville National Forest lies in the Kettle River range of mountains, which is unique in that it is isolated from other mountain ranges of the State. The elevation varies widely, from 950 feet at Oroville to 7,200 feet in the Kettle River Range. This variation of elevation is reflected in the varying conditions of weather and in plant and animal life.

Considerable early history of the Northwest was made in this region, Fort Colville, near Kettle Falls, being established in 1814. At this point the Columbia River falls nearly a hundred feet, the huge volume of water pouring over the granite rocks making a scene which attracts more than local visitors. Tourists drive to the cliff, where the road commands a view of the falls. Here they leave their cars and walk down the shady trail to the very edge of the cascade, where, in May and June they are often able to secure pictures of salmon leaping into the air in their efforts to climb the waterfall. In the quieter eddies below the falls one may see thousands of eels attached to the under cliffs to rest and waving with the current like sea moss.

Adjacent to the Colville National Forest for nearly 100 miles the Great Northern Railway follows the shore of Kettle River up Curlew Valley and past Curlew Lake to Republic, a mining camp from which considerable gold and silver have been shipped. The railroad also extends from Curlew to Oroville, near the outlet of Osoyoos Lake. Tourists may visit the remotest settlement in the Colville National Forest by automobile and secure camping supplies from towns on or away from the railroad. Outfitting towns on the railroad are Marcus, Boyds, Orient, Danville, Curlew, Republic, Oroville, Tonasket, and Riverside. Towns away from the railroad where provisions may be had are Wauconda, Anglin, and Chesaw. There are excellent approaches to the Forest from any direction.

In addition to the railroad, State roads No. 10, No. 4, and No. 22, with their tributaries, intersect the Forest. The Forest Service owns and maintains telephone lines connecting ranger stations, fire-patrol stations, and lookouts, and reaching all the towns mentioned and dozens of other points convenient to roads and trails.

The Forest is remarkably well supplied with large and small game and upland birds, which may be hunted during the open seasons. Trout fishing is good in nearly all the streams. The San Poil River is well stocked with salmon and trout.





On the heights

Eastern brook and rainbow trout are found in all the principal lakes. There are excellent outing opportunities on all parts of the Forest.

Marcus is a railroad junction and division point and a ranger headquarters. From Marcus Lake Ellen may be reached by automobile, train, or pack outfit. Here are excellent fishing and hunting—trout and bass, upland birds, and deer in season.

A visit to Sherman Creek Falls makes a delightful trip, with camping and trout fishing and deer, bear, and bird hunting in season. Travelers may leave their automobiles at the summit of Sherman Creek road and visit the Columbia Lookout Station by a 1-mile trail trip. Here may be obtained a magnificent view hundreds of miles in extent of the snow-capped mountains—the mountains of Canada to the north, the Cascades to the west, and the Bitterroot spurs to the east.

For rugged mountaineering and big-game hunting, the visitors should take a pack trip up Boulder Creek from Orient. This region supports many black and brown bear. A ranger is stationed at Orient, who will be glad to give information concerning the district.

There is good trout and grayling fishing all along the Kettle River, up which the trip may be made from Danville. There are hundreds of ideal camping places along this river. For boating and trout fishing Curlew Lake is recommended. Boats may be hired at Pollard. With a standard spoon hook and a 150-foot line sportsmen may secure plenty of excitement at Curlew Lake. A ranger is stationed at Danville. The Forest Supervisor's headquarters are at Republic, which is the outfitting point for a number of delightful camping, fishing, and hunting trips. Swan, Amy, and Long Lakes are the goals of wagon trips that promise splendid sport. The San Poil River, which may be reached by automobile, furnishes excellent trout fishing with fly or bait. Tons of salmon are caught from the San Poil River annually.

Bonaparte Lake is reached by automobile from Molson or Republic. This lake is locally famous for its recreation attractions, especially trout fishing and camping.

Near by, on a good road, is Lost Lake, where a bathhouse, springboard, and shelters have been provided by the Forest Service for the use of the public. Lost Lake is closed to fishing, as the State of Washington has a fish hatchery here, from which a great portion of the fry used in stocking the waters of eastern Washington are taken. The Forest Service maintains a summer patrol station at Lost Lake, with telephone connections to Wauconda.

The climb to Bonaparte Lookout rewards the traveler with a magnificent view of the mountains of Canada and the beautiful Chopaca Range to the west.

Beaver Lake, 4 miles distant by trail from Lost Lake, furnishes excellent black-bass fishing. Crawfish Lake and Lost Creek, where fishing and hunting in season are good, may be reached from Riverside or Tonasket.

Information about further trips on the Colville Forest, or concerning summer home sites, may be obtained by addressing the Forest Supervisor, Republic, Wash.

## OKANOGAN NATIONAL FOREST

THE Okanogan National Forest is a paradise for sportsmen. Deer, bear, grouse, rainbow trout, and brook trout are abundant. Conconully is a famous hunting and fishing center. Early Winters Creek, near Mazama, is a favorite fishing stream, accessible by automobile. All through this region there are fish for the fisherman and deer for the hunter. A true sportsman will, how-

ever, provide himself with a copy of the game laws and will obey them, in order that there may be some game left for the other fellow.

The Okanogan National Forest extends from the summit of the Cascade Range east to the valley of the Okanogan, north to Canada, and south to the Sawtooth Mountains, which separate the waters of the Methow from those of Lake Chelan.

With the exception of the fertile Methow Valley, it is all mountainous country, great stretches of which are almost unexplored. The shepherd with his flocks, an occasional prospector or trapper, and forest officers are practically its only frequenters. Parts of it, like the mysterious canyon of Lost River, are known to very few. This back country can be reached by trails, and offers unique enjoyment to the man who loves the wilderness. The northern section of the Cascade Mountains is perhaps its most rugged and beautiful part. High peaks, glaciers, and waterfalls abound. The mountain goat, which is rapidly disappearing in the more southern mountains, makes its home here and is frequently seen. There is no open season for killing this rare animal. Deer and bear are little molested. Deer may be hunted from October 1 to November 15, inclusive. The larger streams furnish excellent fishing, having never been fished out. Entering this country from the Methow or Okanogan, one finds abundant horse feed, which makes leisurely travel possible.

Automobile tourists may reach the Okanogan Forest by a 5-hour drive from Wenatchee up the Columbia River to Pateros, turning here up the Methow to Twisp, Winthrop, and Mazama on State Road No. 12. Frequent byroads lead to smaller tributaries. Many good camping places are found along the main road, particularly at Gold Creek, up the Twisp River, and along the west fork of the



Brook trout



Methow. The lower hills are covered with a comfortable shade of open yellow pine timber. The streams are clear and swift.

From State Road No. 12, trails lead 12 or 15 miles to the rugged peaks of the Sawtooth Mountains, 8,000 feet high, which overlook Lake Chelan in its wonderful setting of mountain scenery. Trails also lead down from the summit to the shore of the lake, a distance of about 6 miles.

There are trout in the streams and deer in the hills, and stores and farm houses along the valley to furnish supplies. Innumerable sheltered places invite the tourist to camp in quiet enjoyment. At Alta Lake, near Pateros, the water is clear and warm enough for bathing. Sixty-five miles up the valley the road narrows to a "narrow gauge," or trail, which leads through Harts Pass and then down the western slopes of the Cascades and along the route of the proposed State road crossing the mountains to the coast. At Twisp a road strikes east, crossing the Okanogan Range at an elevation of 4,000 feet and going down to Okanogan. This is usually open to automobiles by May 1, and has excellent places to camp in the yellow pine timber, particularly near Sweat Creek Ranger Station, where the country is smooth and pleasing, having an elevation of 3,500 feet above sea level. From Okanogan State Road No. 10 leads up the valley to Oroville, near the Canadian line.

A return trip may be made through the foothills by way of Loomis and Conconully to Okanogan, and thence south to Pateros. From Oroville one may take a popular run into British Columbia around Lakes Osoyoos and Okanogan. There is a Government reclamation project and dam at Conconully. Many attractive places invite the tourist to camp along the route. One can find hotel accommodation and make the trip from Wenatchee to Okanogan, Oroville, Conconully, Twisp, and return to Wenatchee in three or four days; but many prefer to go prepared to camp and enjoy more fully the cool and shady places along the way.

Tourists looking for an unusually picturesque trip may outfit at Winthrop, go with pack horses up Eight Mile Creek to Cathedral Lake, thence west to the summit of the Cascades, south along the summit to Harts Pass, and return through Mazama to Winthrop. This trip may be made in two weeks, but deserves a much longer time.

At Cathedral Lakes the traveler is near the Bauerman Ridge State sheep preserve, where he may get sight of mountain sheep. At the head of Eight Mile

Creek he is in one of the best mountain goat countries. Both goats and ptarmigan are frequently seen along the route, but may be hunted only with a camera. Here also is opportunity to explore the deep and little known canyon of Lost River, which flows alternately above and below the ground for miles between high rocky walls. Cathedral, Rimmel, Sheep, Ashnola, and Windry Peaks may be climbed for the extensive views which they command. Ashnola and Pasayten Rivers furnish excellent fishing, as do other streams and lakes.

The trails follow for miles along open grassy ridges, unique in the Cascades and a great convenience for horse travel. There is much to explore and enjoy. The summit of the Cascades is exceedingly rough and broken, but the old trails are traveled each year by the sheepmen with their horses and many thousands of sheep. It is a wonderful country, with high peaks, glaciers, mountain meadows, and snow fields which are yet to be opened to those who enjoy mountain travel.

Shorter trips, either by horse or afoot, are numerous. One-day trips may be made from Methow Valley to the 8,000-foot summits of the Sawtooth Mountains and thence to Lake Chelan; from Mazama to the summit of the Cascades; from Conconully or Loomis to the Okanogan summits, 6,000 to 8,000 feet high. Tiffany Mountain, 8,775 feet in elevation, can be reached in a day from Conconully. Mount Gardiner, 8,300 feet, offers a difficult climb from Winthrop. Two days should be allowed for this trip. An especially pleasing trip, either on foot or horseback, starts at Twisp, follows the Twisp River to War Creek or Twisp Pass and down to the head of Lake Chelan, where the boat trip on the lake may be made from Stehekin.

For those who desire to build summer cottages or lodges in the cool open shade of the yellow-pine timber there is abundant opportunity. It is especially attractive in the vicinity of Winthrop and Twisp. There is train service to Pateros and comfortable twice-a-day stages up the Methow either to Twisp or to Winthrop. Land can be leased at a moderate rental from the Forest Service. Sites beside automobile roads and within easy reach of supplies are available.

Full use of the National Forests for recreation in all its phases is encouraged. The headquarters of the supervisor is at Okanogan. Rangers are stationed at Winthrop, Twisp, Pateros, Conconully, and Loomis. Information concerning recreation and other features of the Forest may be secured at any of these points.

## OLYMPIC NATIONAL FOREST

THE Olympic National Forest is on the Olympic Peninsula, and takes in the entire upper drainage of the Olympic Mountains. Since the extension of the Olympic Highway to the foothills along Hood Canal, the Straits of Juan de Fuca, and Quinault Lake, a great number of people have been able to explore the Olympics.

The rugged crags of Mount Constance, the Brothers, and the Cushman Mountains, as they appear from any point on Puget Sound, do not look easy to scale; yet frequently during the summer season parties ascend these high, majestic snow-caps. Mount Olympus, with its many hanging glaciers, has been the main object of most of the larger exploring expeditions. It can be climbed with comparative ease and safety during late summer, although it calls for trail travel of fully 40 miles up the Elwha River. Greater distances must be covered coming up the Hoh from the west, up the Quinault from the south, or over the Dosewallips divide from the east, in order to reach its immediate base. It has an altitude of about 8,000 feet and is the culmination of a group of rugged peaks and high, craggy ridges ranging from 5,000 to 6,000 feet.

Although the valleys and lower slopes of the Olympic Mountains are heavily timbered, many large open park areas are located near the divides; and it is here, during the summer season, that one sees the Olympic elk (Roosevelt elk), an animal protected by law until now it is found in abundance throughout these natural retreats. These park-like woodlands are of special interest, since they are little beyond the exploration stage of development at present. They abound in interesting animal and alpine-plant life.

Crescent Lake, Quinault Lake, and Lake Cushman, situated as they are in densely timbered regions abruptly bordered by steep, high, rugged mountain slopes, almost approach the sublime in natural beauty. For those who do not wish to take their own camp equipment, attractive hotels have been built at these points, and recreational facilities of many kinds have been developed. Trout—Beardsley, Lake Crescent, cut-throat, rainbow, Dolly Varden—and other gamey fish are found in these lakes. A number of summer visitors who come regularly have established summer cottages on the shores on lots rented from the Government at the modest rates of \$10 and \$15 per annum.





Summer home on the shore of Lake Quinault

Crescent Lake is a beautiful, deep-blue body of water 11 miles long by one-half to 2 miles wide. It is set between the timbered slopes of Mount Muller and Mount Storm King, on the northern edge of the Olympic Forest. Here there are good boating, fishing, and bathing. Hotels are available for those who do not care to camp out. There is a daily automobile stage service between Crescent Lake and the Sol Duc Hot Springs, and to Forks, the present terminus of the Olympic Highway. Mora, on the Quillayute, can be easily reached by motor, and from here it is a walk of  $1\frac{1}{2}$  miles to La Push, the Indian village of the Pacific Ocean beach. Aurora Camp, Happy Lake, and the Olympic Hot Springs are a few of the interesting objectives in the region for hiking trips. Crescent Lake is located 220 miles from Seattle, on the scenic Olympic Highway. Convenient stopping places are found along the way. For those desiring to follow regular transportation routes a midnight steamer may be had from the Coleman Dock at Seattle. The boat arrives at Port Angeles daily at 7 a. m., from which point large motor stages take the tourists direct to Crescent Lake, 20 miles west. Or one may travel over the Seattle, Port Angeles & Western Railroad, the railroad ticket entitling one to



A wayside camp—Olympic National Forest

take a boat from Seattle at 8 a. m. and 5 p. m., transferring to the railroad at Port Townsend. By this route Port Angeles is reached at noon or about 10.30 p. m. Lake Crescent is unique in being the home of the Beardsley and Crescent trout, which are found nowhere else in the world. The Beardsley is the largest known true fresh-water trout. Specimens weighing 24 pounds have been caught in recent years, by trolling with a metal line at a depth of 200 feet. The open fishing season is from April to November, inclusive.

The Quinault Lake region has been made accessible recently to tourists and is rapidly becoming appreciated on account of its picturesque setting among densely timbered mountain slopes, with a background border of high craggy ridges and snow-covered peaks. It is approximately 4 miles long by 2 miles wide. It is located 45 miles north of Hoquiam, Wash., and being on the Olympic Highway can readily be reached by automobile. There is a daily motor stage service between Hoquiam and the lake. Points of interest in this vicinity are Mount Baldy, Colonel Bob, Finley Ridge, and Three Lakes meadow. The canoe trip down the lower river 35 miles through the Quinault Indian Reservation to Taholah, on the ocean beach, is worth taking. High glacial mountains, such as Mount Anderson and some of the large groups surrounding Olympus, offer wilder interest. Good fishing has always been a strong attraction to those visiting this region. Quinault



Elk on Hoh River—Olympic National Forest

Lake teems with rainbow trout and a good variety of small salmon, which may be caught during the open season. Clear and cool drinking water is abundant in springs and small creeks flowing from the mountains. Bathing and boating are features not to be overlooked.

Lake Cushman, located near the lower end of Hood Canal, is somewhat smaller but no less attractive than Lakes Crescent and Quinault. Here also are hotel accommodations and opportunities for canoeing, fishing, and bathing. The upper and more mountainous country is quite accessible from here.

Olympic Hot Springs, which can be reached by road or trail, is 11 miles from the Elwha post office, on the Olympic Highway. It is an especially attractive place for those desiring the privileges of hot mineral baths. These springs are free to all. The water flows from beneath the surface of rock ledges in sufficient quantities to accommodate hundreds of tourists. A hotel with reasonable rates is established here, and there are also bath-houses. For those preferring their own accommodations, splendid camping places can easily be had near the springs along Boulder Creek. A camp here makes good headquarters for side trips in quest of the more hardy forms of recreation, such as mountain climbing and hunting in the higher mountains and glaciers. Hunting is fairly good within a few hours of the springs, and there is an open game season.



Deer, bear, mountain lion, and smaller game, such as grouse, quail, and pheasants, are found in portions of the Olympic Forest. For the camera enthusiast there are mountain parks, dense forests, snow peaks, glaciers, lakes, cascades, and waterfalls, and wild animal life. Of the latter, the Olympic elk are of the greatest



Falls and canyon on Soleduck River

interest to the average mountain visitor. It is estimated that there are more than 5,000 elk to be found within the Olympic National Forest. They are often seen in bands of from 20 to 100, particularly in the larger mountain meadows and valleys of the central and western slopes. Approximately 2,000 of these animals winter in the Hoh Valley alone. The other popular haunts are the Queets, Elwha, Quinault, Soleduck, and Bogachiel Valleys, in the order named. There is no open season for killing elk, though there is no law against hunting with a camera. The blacktail is the only species of deer known to range in the Olympic Mountains and may be killed only during the month of October. Black bear are fairly common, and cougar are rather frequently found. The

large timber wolf, a menace to young deer and weak elk during the season of deep snows, is becoming rare. Wildcat, marten, fisher, beaver, marmots, squirrels, rabbits, mountain beaver, and chipmunks are the more common smaller wild animals.

The Forest Supervisor's headquarters is at Olympia, and district rangers are located at Port Angeles, Quilcene, Hoodspport, and Olson, Wash.

## RAINIER NATIONAL FOREST

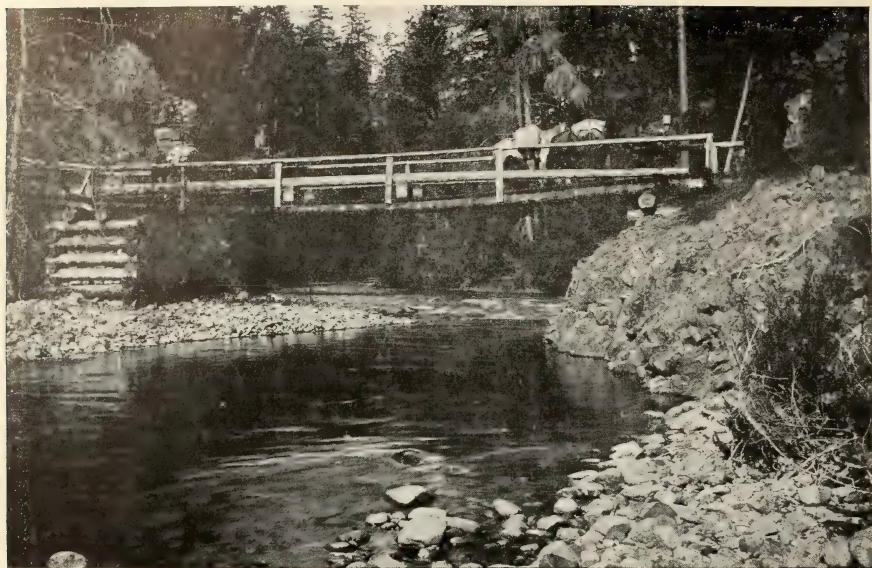
**R**AINIER NATIONAL FOREST extends from the White River on the north to Mount Adams at the south, and from the headwaters of the Skookumchuck River on the west to the lower reaches of the Naches River on the east. Mount Rainier National Park is entirely surrounded by the Rainier National Forest.

The larger streams of the Forest are the White, Cowlitz, Cispus, and Tieton Rivers, and the Naches and its tributaries. The main divide of the Cascades separates the Forest into two parts quite different in climate, landscape, and forest cover. Dense forests of fir, cedar, and hemlock cover the valleys and lower foothills of the west side and traveling is limited to the trails. There is little forage except on the summit of the higher ridges. On the east slope the timber is open and there are few localities where grass is not abundant.

The Cascade divide extends north and south through the Forest, reaching an elevation of 12,307 feet in Mount Adams and 8,201 feet at the Goat Rocks. The general elevation of the summit is about 5,000 feet. It is a subalpine region and includes many open parks and grassy meadows, where there is pasturage for saddle and pack animals.

Many of the forest streams are well supplied with cut-throat and rainbow trout. The Dolly Varden is common, except in the smaller streams. It is much inferior in flavor to the other trout species. Great numbers of trout are caught in Packwood Lake and the Green Water Lakes. The best trout streams are the Naches, the South Fork of the Tieton, and upper Bumping River on the east slope and the tributaries of the Cispus and Cowlitz on the west slope. A fair catch can be made in nearly all the streams, but the best fishing is in those most remote and least accessible.

Deer are abundant, but not easily seen or hunted except in sparsely timbered areas of high elevation. Elk, which have been introduced, are rapidly increasing under the protection of the game laws. Black bear are abundant, and mountain goats are occasionally seen. The pheasant and the grouse (or "hooter") are the most common game birds. Mountain and California quail are not uncommon, and ptarmigan are occasionally seen at the higher elevations. The State game and fish laws apply to National Forests, and Forest officers cooperate with the State authorities in their efforts to preserve by careful use the game resources of the State.



"Bow string" pack bridge over Rattlesnake Creek—Rainier National Forest

Roads lead into the Forest along the larger stream valleys, but have not yet been completed across the summit of the Cascades. State highways carry the travel from Tacoma and Seattle well into the Forest along the White, Nisqually, and Cowlitz Rivers.

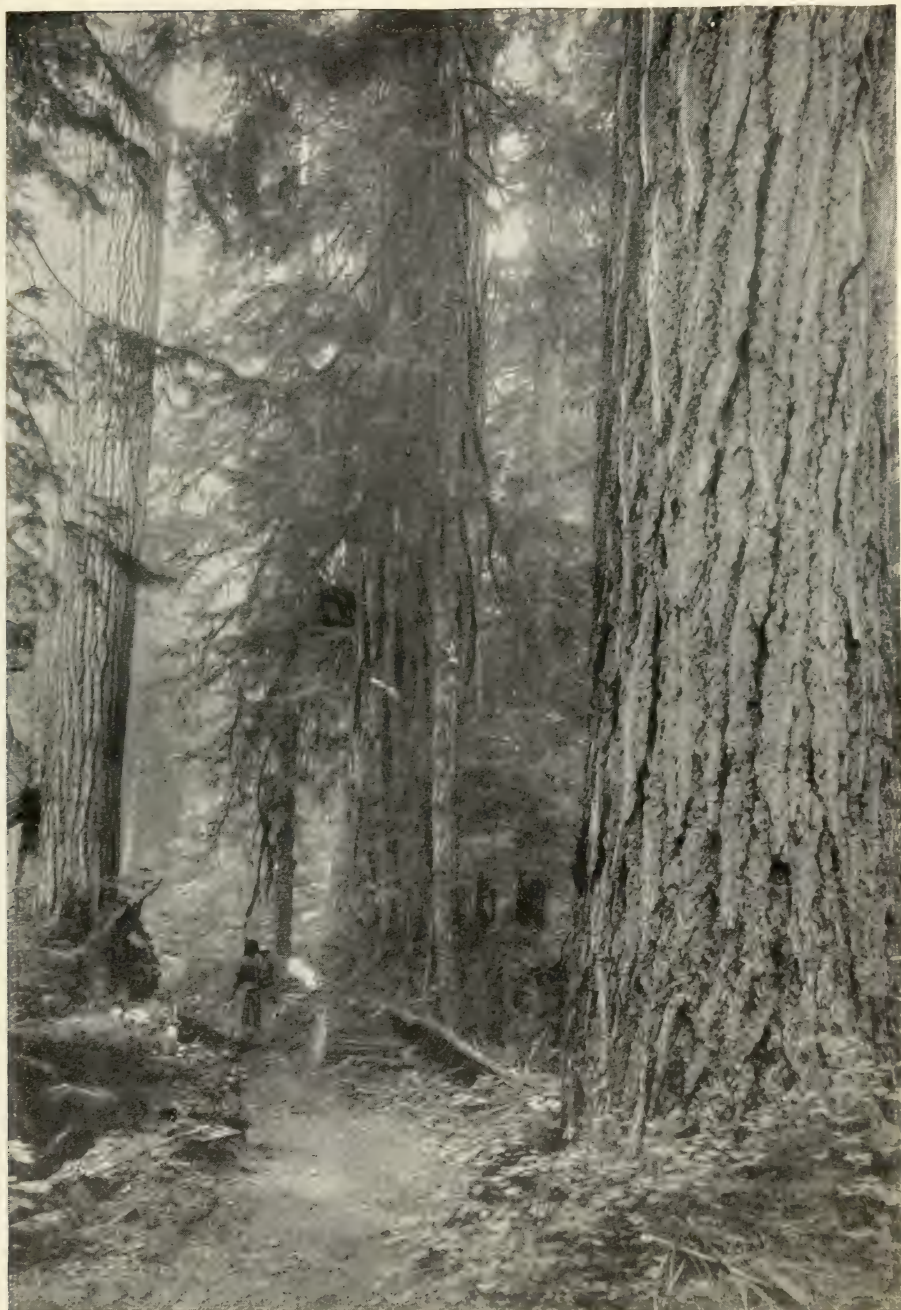
McClellan Pass Highway, built by the Forest Service and the State, is now completed as far as The Dalles of White River and is under construction to the northeast corner of the National Park. From Enumclaw this road is through a dense forest, the timber of which is straight and tall.

A summer-home colony is growing up beside this highway, just above Silver Creek. This stream receives its name from the succession of silvery white falls and cascades along its course.

The National Park Highway from Tacoma to Mount Rainier follows the Nisqually River in the Rainier National Forest for 3 miles.

A fairly good trail, starting near Copper Creek in the Nisqually Valley, extends north across the Mowich and Puyallup watersheds, through heavy timber, to the Carbon Valley at Fairfax.





Douglas fir on the Rainier National Forest



At the top of the divide—Rainier National Forest

A passable road extends up the Cowlitz Valley to Lewis, where there is a hotel and store. A trail leads from Lewis to Packwood Lake. Lewis is 16 miles by trail from Longmire Springs. From Lewis the Chanapecosh Hot Springs are reached by a 14-mile trip, partly by road and the remainder by trail. The Goat Rocks are high snow peaks about 15 miles distant from Lewis, situated in a region that is particularly attractive.

A graded trail extends from Longmire Springs to Mount Adams, at the south end of the Forest. This trail leads through a country of many scenic attractions and makes a foot or horseback trip well worth while.

The Chain of Lakes country is a high but comparatively level region just below the snow hills on the west slope of Mount Adams. It is a favorite berry-picking and hunting ground of the Indians, who go there by hundreds during the latter part of August.

The traveler may proceed from the Chain of Lakes to Glenwood, or Trout Lake, and thence to Portland by stage and train. The entire trip from Tacoma by Longmire Springs, Chain of Lakes, Glenwood, or Trout Lake, to Portland may be made

in from ten days to two weeks, and affords an excellent opportunity to see the south slope of Mount Rainier in the National Park, and the west slope, the summit, and the east slope of the main Cascade Range in the Rainier National Forest.

The Mount Bel and Lake Christine region is one of the most beautiful places in the Forest. It is a mountain country, with many small clear lakes and alpine meadows.

On the east side of the Forest, wagon roads passable by automobile extend up the Naches and Tieton Valleys from Yakima and Ellensburg. Hotel accommodations can be obtained at Bumping Lake and on the Naches at the mouth of Bumping River. There is also a wagon road into the Forest up the Taneum Valley. Many summer-home sites are located north of the junction of American and Bumping Rivers, and may be reached by automobile up the Naches Valley.

A splendid horse trip carries the traveler up the American River to Bear Gap, thence south along the main summit of the Cascades to Carleton Pass, returning by way of Bumping Lake and Bumping River. One of the best views of Mount Rainier may be seen along the summit. This trip requires at least a week's time and should not be undertaken until about the middle of August, on account of snow. There is a tent hotel at the mouth of American River, where accommodations may be secured.

Colonies are growing up on the summer-home site tracts on Gold Creek and along the Naches. These sites are rented from the Government at rates ranging from \$10 to \$15 a year, according to location.

The Forest Supervisor's headquarters is in the Post Office Building, Tacoma. District rangers are stationed at Fairfax, Nile, Enumclaw, Randle, Ashford, Lewis, and Yakima.

## SNOQUALMIE NATIONAL FOREST

THE Snoqualmie National Forest is situated in the eastern portions of King and Snohomish Counties, extending from the Pierce County boundary on the south to the Skagit County line on the north. The eastern boundary of the Forest is the main summit of the Cascade Range, while the western line is along the foothills. The principal streams draining this territory from north to south are the Sauk, Stilaguamish, Sultan, Skykomish, three forks of the Snoqualmie, and the Cedar and Green Rivers. Narrow valleys are characteristic of the region, between which the intervening ridges rise in steep slopes





The forest ranger knows the country and is always glad to direct travelers

culminating in high rugged peaks, usually above timber line and in many cases clothed with perpetual snow and ice.

Although close to many cities, the Snoqualmie Forest is one of the most popular regions for sportsmen in the State. Black-tail and mule deer and black and brown bear are found throughout the territory. Deer may be hunted only during the month of October. Mountain goats at one time were very plentiful, but have been killed off until at present they are to be found only in the most rugged and inaccessible portions of the Forest. Fishing is excellent after the first of July, rainbow trout and cut-throats abounding in all the larger streams. Many of the lakes have been artificially stocked, both with native species and with eastern brook trout. The open fishing season is from April to November, inclusive. Ptarmigan are frequently seen in the higher mountains, and grouse and fool-hens are found in limited numbers at lower altitudes.

Attractive camp sites are situated at short intervals along every creek and among the lakes and meadows in the high country. Along the principal routes of travel the Forest Service has cleared up the most desirable sites for the benefit of the public.

Glacier Peak, 10,436 feet high, is the most noted landmark in the region, and one of the most beautiful snow peaks in the Cascade Range. A large system of glaciers extends around the entire mountain.

One of the most beautiful and accessible bits of mountain scenery in the State lies along the valley of the South Fork of the Stiklucumish between Silverton and Monte Cristo. Both sides of this valley are lined with rugged spirelike peaks, which bear many snow fields and living glaciers—a paradise for those who are fond of mountaineering. Several of these peaks have never been scaled.

The Index region, in the lower Skykomish Valley, is well worth visiting. It is walled in by high mountains, such as Index Mountain, Gunn Peak, Baring Mountain, and Mount Persis, which reach elevations of from 6,000 to 7,000 feet. Several beautiful waterfalls in the main Skykomish River are situated here. There are many side trips to charming mountain lakes, such as Isabel and Serens. Farther up the valley the traveler can reach without great difficulty the splendid mountain region surrounding Lake Dorothy. The country around Snoqualmie Pass is the most interesting in the southern portion of the Forest. It is easily reached by rail or automobile and is noted for its beautiful lakes and massive rocky peaks. Snow Lake is an exceptionally beautiful sheet of water, surrounded by towering mountains and glistening snow fields. Franklin Falls is another point of interest.

Accessibility is one of the great advantages of this region from an outing standpoint. All the principal valleys can be inexpensively reached by train or automobile in from 2 to 6 hours from Seattle, Tacoma, or Everett. Regular stage lines run from the Forest to all the larger towns adjacent to its boundaries. Also, it is crossed by the Sunset and Scenic Highways, by the main lines of the Northern Pacific, the Chicago, Milwaukee & St. Paul, and the Great Northern Railways, and is tapped by the Hartford and Eastern and by the Darrington Branch of the Northern Pacific.

Travel off the regular routes is generally arduous, not only because of the steepness of the mountains, but also because of the heavy timber and dense undergrowth. The excellent trails of the Forest Service, marked by frequent guide signs, enable even the inexperienced traveler to reach the most interesting places; but anyone who has not had considerable experience in mountaineering should not attempt to go into the remote sections or off the main trails without a reliable

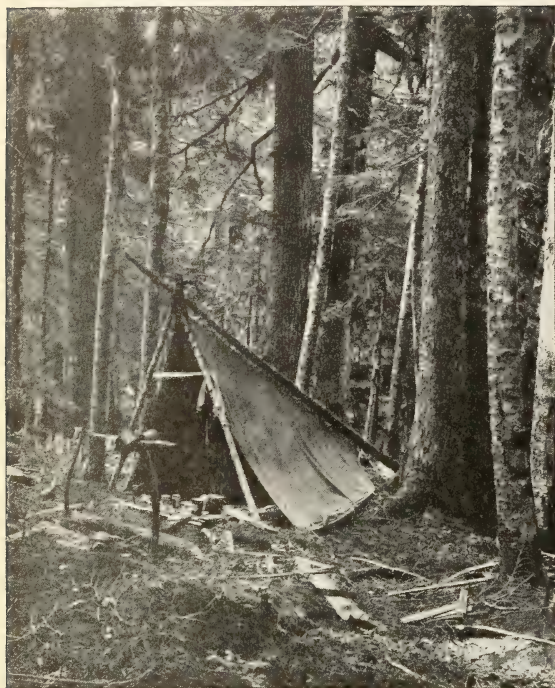
guide. In most instances, anyone who takes a trail trip will be forced to carry his supplies and equipment upon his back, because pack horses and saddle horses are scarce and there is little available pasturage. Pack trips of three or four days'

duration are perfectly feasible over the main trails, provided arrangements are made to carry sufficient hay and grain.

The best season for camping is between June 15 and November 1, although in some cases there is a month of good weather in April or May. During winter the snowfall is ordinarily extremely heavy, varying in depth from 4 to 20 feet.

#### UPPER SAUK REGION

Beginning at the north end of the Forest, the last outfitting place is Darrington, at the terminus of a branch line of the Northern Pacific. Darrington is also reached from Arlington, 30 miles west, by automobile or stage over a fairly good road.



Small but snug

Hotel accommodations can be had at Darrington, and supplies, horses, and guides can be obtained at reasonable rates. There are no garages, but gas is available.

Hotel accommodations and supplies can be obtained also at Oso, Hazel, and Fortson, railroad stations between Arlington and Darrington. From Darrington trails radiate in various directions, the most popular being up the Sauk River, over a good route suitable for horses. Excellent camping places are found along it at close intervals. The distance to Clear Creek Ranger Station is 3 miles; to the Whitechuck bridge, 10.6 miles; to Goat Lake, 26.1 miles; and to Barlow Pass, 24.4 miles. From the Whitechuck bridge a horse trail extends up the river of the same name to Fire Creek, 25 miles from Darrington, and it is not difficult to con-



tinue by foot to Glacier Peak, a total distance of 38 miles. The good fishing grounds on Deer Creek are reached over a trail running north from Hazel across the Higgins Range (11 miles) and a branch leads off this trail to the Mount Higgins Lookout Station.

Fishing is especially good in all the streams of this locality. The most popular streams are Boulder Creek, Clear Creek, and the Sauk River from the mouth of the Whitechuck to Bedal, at the junction of the north and south forks of the Sauk. The South Fork of the Sauk is closed to fishing and hunting. There is no fishing in the Whitechuck River on account of the glacial sediment carried by that stream. Good fishing may be had in Deer Creek, which enters the North Fork of the Stilaguamish River at Oso. Deer and bear are fairly plentiful, the best hunting being on Mount Higgins, Squire Creek, and Whitechuck Mountain. Grouse are quite plentiful along the North Fork of the Stilaguamish and on the slopes of Mount Higgins. Owing to the rapid extinction of the game in this region, the Goat Lake Game Refuge was set aside in the hope of increasing the number of game animals. This refuge embraces the entire watershed of the South Fork of the Sauk and that part of the watershed of the South Fork of the Stilaguamish above Perry Creek. Neither hunting nor fishing is permitted on this area.

The best scenic trips include Goat Lake, Glacier Peak, and the headwaters of Clear Creek, and during late summer many inspiring camping places can be found in the higher mountains among the lakes and mountain meadows. The timber is especially fine along the Sauk and the lower portion of the Whitechuck. A fire lookout station is maintained on Pugh Mountain at an elevation of 7,150 feet, from which a wonderful view can be obtained of the Cascade Range from the Canadian boundary to Mount Rainier and Mount Adams. Huckleberries are especially plentiful on Mount Higgins and Jumbo Mountain during the latter part of August and early September. Salmon berries are plentiful along the Sauk River earlier in the season.

### MONTE CRISTO REGION

The town of Granite Falls is the last outfitting place for the Monte Cristo region. Hotel accommodations and all kinds of supplies are available, including garage facilities, and the services of guides may be obtained. Hotel accommodations can be had farther up the valley at Silverton and Monte Cristo. Granite Falls, Silverton, and Monte Cristo are on the Hartford & Eastern Railroad. A good

automobile road extends from Everett to Granite Falls, a distance of 20 miles, over which there is a regular stage service. Machines can be driven to Robe, 8 miles farther east.

Many points of interest off the railroad may be reached over a good system of trails, such as the 5-mile trail from Rotary to the summit of Pilchuck Mountain, where a fire lookout station is maintained. A sunset or a sunrise view from this point will leave a lasting impression on the mind of any nature lover. Another good trail leaves the railroad at Mackie, extends up Black Creek to Hoodoo Pass, 4 miles, and continues to Pilchuck Ranger Station, on the Pilchuck River, 8 miles from the railroad. From Silverton a foot trail leads south over Marble Pass, at an elevation of 4,000 feet, continuous down to the Forty-Five Mine (6 miles) and on to Sultan River, 13.1 miles in all. Some of the most beautiful scenery in the locality is along the Sunrise trail, which leaves the railroad about 6 miles east of Silverton and extends south for 11 miles over a high mountainous country to the head of Sultan River. This trail is not in condition for horses, but can be traversed afoot without great difficulty. Vesper Rock can be climbed easily from the trail. From Barlow Pass it is only 10 miles to Goat Lake, over a very good trail suitable for horses. Darrington can be reached from Barlow Pass by the trail down Sauk River, a little less than 25 miles. A foot trail starts at Monte Cristo, leads over Poodle Dog Pass to Silver Lake (1.6 miles), and thence down Silver Creek to Galena and Index. The latter point is 17.5 miles from Monte Cristo.

Fishing is one of the chief attractions in this region, and splendid catches of rainbow trout are made throughout the open season in the South Fork of Stilaguamish River. A number of lakes on the adjacent mountain slopes have recently been stocked with trout and in a few years will provide splendid sport. Hunting is good in the lower part of the valley, deer, bear, and grouse being fairly plentiful. The upper end of the valley has been included within the Goat Lake Game Refuge, and all hunting and fishing is prohibited east of the mouth of Perry Creek. Attractive camp sites are found on the Pilchuck Lookout trail, on the Deer Creek trail, near Kelcema Lake, at Goat Lake, and at Silver Lake near Monte Cristo. The best scenic trips are on the Sunrise trail, the Silver Lake trail, and in the vicinity of Goat Lake. In addition to the wonderful mass of rugged mountains and glaciers, seen even from the railroad, the Stilaguamish gorge between Granite Falls and

Robe is a place of exceptional beauty and interest. Granite Falls, a short distance below, is worth a side trip. During the latter part of August and early September huckleberries and blackberries abound on the slopes of Long Mountain, Dickerman Mountain, and in the vicinity of Silver Lake.

The trip into the Monte Cristo district is especially desirable to those who have only a limited time to spend, as it can be made from Seattle or Everett in one day. This is made possible by the large open sight-seeing cars that are operated by the railroad.

#### SKYKOMISH RIVER REGION

In the lower Skykomish Valley roads extend from the town of Sultan in a northerly direction toward Sultan Basin for from 6 to 12 miles, beyond which the traveler must go afoot. However, horses can be taken over the Olney Creek route the entire distance of 15 miles. The Sultan Canyon route is more attractive from a scenic standpoint. Farther up the valley the Index region can be most easily reached from the town of Index, situated on the main line of the Great Northern. It can be reached also from Everett over an excellent automobile road, all but 8 of the 25 miles being hard-surfaced. Stage lines operate regularly between Monroe and Index during summer. At Index,



A mountain snowshoe trip in the alpine country around Silver Creek—  
Snoqualmie National Forest



hotel accommodations, storage facilities for automobiles, and gasoline may be had, and a full line of supplies and fishing equipment. Guides can be obtained here, but no horses.

Trails lead out in several directions to surrounding points of interest, the most important of which is the North Fork of the Skykomish River, famous for its big rainbow trout. On this trail Galena, an abandoned mining camp, is 9 miles from Index; and the falls of the North Fork, 13 miles. Lake Isabel, a beautiful sheet of water set among rugged peaks, lies 3 miles north of Reiter, from which point it is reached by a trail. Reiter is a railroad point 4 miles west of Index. High upon the slopes of Index Mountain lies Lake Serene, a small body of water reached by  $4\frac{1}{2}$  miles of foot trail. Good fishing is found in the vicinity of Index, in the North Fork and main Skykomish Rivers. Hunting is good, and many bear and deer are killed each open season. Grouse are scarce. The majestic beauty of Mount Index is famous throughout the State, and the falls of the main Skykomish River nearby are an attraction to every visitor of the locality.

A new road, giving access by automobile to the entire valley, has been constructed from Index 36 miles up the Skykomish valley to Berlin, Skykomish, and Scenic Hot Springs. The best trip from Berlin or Skykomish is that up Miller River to Lake Dorothy, the 12 miles being covered by an excellent trail. Splendid fishing can be found all along Miller River. Lake Dorothy was artificially stocked some years ago, and now it affords some of the best sport in this part of the State. It is a mountain lake, surrounded with rugged peaks and snow fields, affording most attractive camping places.

A trail extends 8 miles up Beckler River, where there are excellent fishing and many good camp sites. Hotel accommodations and supplies can be had at both Berlin and Skykomish, and in the latter place gasoline is available and the services of guides can often be obtained. At Scenic Hot Springs, in the upper end of the valley, there are good hotel accommodations. From here the main summit of the Cascade Range can be reached by foot without great difficulty, up Surprise Creek or Deception Creek. Numerous small lakes are situated at the heads of these streams. There are good camp sites along all the streams, and fishing is excellent in Tye River.

## SNOQUALMIE RIVER REGION

North Bend, 37 miles from Seattle, is the logical starting point for all trips along the North and Middle Forks of the Snoqualmie River, and is reached by railroad and by an excellent automobile road. There is regular stage service from Seattle. Hotel accommodations may be obtained, and all kinds of supplies may be purchased. Several garages will care for cars, and horses and guides are available. A machine can be taken on a fair road from 6 to 8 miles up the North Fork, whence a foot trail continues nearly to the headwaters of this stream. Lakes Hancock and Calligan, on the North Fork, are very popular among fishermen and campers. For trips up the Middle Fork, machines are usually driven as far as Hubbard ranch, a distance of 6 miles. A good horse trail continues up the Middle Fork Valley to the Halfway House, 15.2 miles from North Bend, and on to Goldmyer Hot Springs, a total distance of 28.3 miles. From the Halfway House another trail extends up Pratt River to Pratt Lake (9.2 miles) and Rockdale (15 miles). The trail to Snoqualmie Lake leaves the Middle Fork trail about  $3\frac{1}{2}$  miles above the Halfway House, passing Snoqualmie Lake at 12.3 miles and continuing on to Lake Dorothy and Skykomish, 29.5 miles from the Halfway House.

There is splendid fishing in both the North Fork and Middle Fork of the Snoqualmie. Game is abundant, and many deer and bear are killed here every season. A number of elk from the Yellowstone Park were liberated here a few years ago, and may often be seen in the locality. They are protected by State law, under penalty of heavy fines. Magnificent fir and cedar timber occurs along almost the entire length of the Middle Fork valley, and is one of the few remaining samples of the splendid growth formerly found throughout the western part of the State. The mountain scenery is particularly attractive in the vicinity of Goldmyer Hot Springs and Dutch Miller Gap.

## ALONG THE SUNSET HIGHWAY

From North Bend the Sunset Highway extends up the South Fork of the Snoqualmie to Snoqualmie Pass, 23 miles; to Lake Keechelus, 29 miles; and thence to Cle Elum and Ellensburg. All points along this route may also be reached easily over the main line of the Chicago, Milwaukee & St. Paul Railway. Hotel

accommodations and gas may be had at Snoqualmie Pass and at various resorts on Lake Keechelus.

Excellent camp grounds have been constructed by the Forest Service at Denny Creek, 20 miles east of North Bend, and are open to the public without charge.



Entrance to the Denny Creek Camp Grounds

Running water has been piped through the grounds, and tables, stoves, parking space for automobiles, and other conveniences provided. To reach Snow Lake from this point one travels  $2\frac{1}{2}$  miles by road and 5 miles by trail; also a trail leads up Denny Creek for 2 miles to Snowshoe Falls, and another up the main river  $1\frac{1}{2}$  miles to Franklin Falls. The trail to Pratt Lake and the Middle Fork leaves the Sunset Highway 2 miles west of the camp grounds, and climbs the mountain on an easy grade to Pratt Lake, a total distance of 8 miles. From this point it continues down Pratt River to the Halfway House, 17.2 miles from Denny Creek, and to North Bend, a total distance of 32.4 miles. A fire-lookout station on the summit of Granite

Mountain is 5 miles from Denny Creek Camp Grounds, over a branch leading off the Pratt River trail. The South Fork of the Snoqualmie has recently been stocked and is closed to fishing. However, Snow Lake was stocked several years ago, and limit catches are common there. Bear hunting is excellent on Granite Mountain and along Humpback Creek, and grouse are also plentiful.



Deer are reasonably abundant. The scenery is particularly good around Snow Lake and on Commonwealth Creek, where there is a group of high, rocky peaks. From the standpoint of timber the drive between North Bend and Denny Creek Camp Grounds is one of the most beautiful in the State. Franklin Falls offers another attractive feature to the trip. During the fall huckleberries are abundant on Granite Mountain and around Snow Lake.

### PROHIBITED AREAS

The valleys in the south end of the Forest are closed to hunters, campers, and fishermen for the reason that they are the source of municipal water supplies. Seattle is dependent on Cedar River and Tacoma on Green River. As previously explained, no hunting or fishing is permitted in the Goat Lake Game Refuge, in the Monte Cristo region.

### GENERAL INFORMATION

More detailed information and maps of the Snoqualmie Forest may be obtained from the Forest Supervisor, whose headquarters is located in the Stuart Building, Seattle, or from the district rangers, whose post offices are Seattle, Snohomish, Darrington, and Skykomish.

## WASHINGTON NATIONAL FOREST

THE west slope of the Cascade Mountains from the international boundary southward about 60 miles forms the Washington National Forest. It is here that the Cascade Mountains reach their greatest development, spreading out to a width of nearly 100 miles in a stern and rugged region, characterized by narrow shoestring valleys, with little or no bottom land, and flanked by steep slopes, the whole set amidst a vast expanse of mountain peaks.

The Skagit River, which crosses the line from British Columbia, forms with its tributaries the main drainage. For about 20 miles the stream flows south, between low wooded banks, through a comparatively broad valley. Here and there it forms deep, dark pools which tempt the ambitious angler.

Just below Big Beaver Creek the river gains momentum and is literally turned on edge as it passes between the frowning walls of Canyon Diablo, a narrow cleft scarcely 10 feet across, with sheer walls rising upward 150 feet. At low water the canyon may be penetrated by boat.

Emerging from this defile, the river spreads out into a great rock-walled pool, rushing over the rocks and down into the broadening valley in a series of foaming rapids 7 miles in extent. The upper Skagit River country is reached by the county road up the valley from Sedro-Woolley, which is passable for automobiles to a point 10 miles above Marblemount. Pack horses may be obtained at Marblemount, or one may pursue his journey on foot. At the mouth of Goodell, Stettattle, and Ruby Creeks are road houses where meals and lodgings may be obtained. Shelters have been erected for the accommodation of camping parties at intervals along the trail. It is known as the Goat Trail, by reason of its roughness, and among its scenic features are the Devil's Elbow and the Giant Stepping Stones.

The main upper Skagit River and its tributaries—including Ruby, Lightning, Big Beaver, and Little Beaver Creeks—are filled with rainbow, Dolly Varden, black-spotted, and steel-head trout, and offer unsurpassed fishing. Hunters with the camera may find black and brown bear and black-tailed and white-tailed deer fairly abundant; and goat, cougar, bobcat, coyote, and various fur-bearing animals are also common. However, all that portion of Whatcom County within the Washington Forest, which includes the four tiers of townships south of the international boundary, has been set aside as a State game preserve, and only the hunting of predatory animals is permitted.

The romance of early mining days still hovers over Ruby Creek. Here are the Butcher Cabin, Ghost Cabin, Goat Stamp Mill, Hidden Hand, Lone Tree Gulch, Nip and Tuck, and many other old prospects and abandoned workings, around which passing years have woven strange and wonderful tales.

Those who prefer the high mountain-meadow country will find along the summit of the Cascades the land of their dreams. Here is an abundance of feed for horses, and one can ride or walk in the bracing air and sunshine, camping wherever night overtakes him. If he has sufficient skill and patience, he may be able to photograph a mountain goat at close range. Splendid fishing is offered by nearly all the streams on the Washington Forest.

Besides the upper Skagit and its tributaries, Illabot Creek and Lake, Finney Creek, and the Suiattle River and its tributaries deserve special mention.

Baker Lake, which is reached by a 17-mile trail from Concrete, a railroad and outfitting point, is attractive to many people who enjoy camp life. There is a



Forest Service trails lead deep into the heart of the woods and mountains—Thunder Mountain and Pyramid Peak

large fish hatchery located beside the lake. The photographer may find plenty here to try his skill—Mount Baker and its reflections in the clear waters, the shifting shadows of massive Mount Shuksan, and the picturesque Old Baldy standing near by.

Five miles above Baker Lake, on the eastern slope of Mount Baker, are Baker Hot Springs, where the water bubbles from the ground at a temperature of 110° F. A small natatorium has been constructed here and an open camping shelter, which will accomodate half a dozen tourists. A stone fireplace in front reflects heat into the shelter.

Mount Baker, 10,827 feet high, lies far to the westward and entirely detached from the main Cascade Range. This beautiful mountain, surrounded by mammoth glaciers which resemble the frozen tentacles of a mighty octopus, and by far-flung ice fields, crashing waterfalls, towering pinnacles, and awe-inspiring vistas, is situated within 30 miles of tidewater and the Pacific Highway.

Adjacent to the mountain on the north, at an elevation of 7,000 feet, are Skyline Meadows. These may be reached from Bellingham within a half day,



the trip being by automobile, except the last 5 miles, which is over a first-class trail. These meadows comprise hundreds of acres of open land, which may be traveled with ease. The dominant feature of the landscape is the massive form of Mount Baker, which glistens and towers beyond an undulating vista dotted by alpine firs standing as sentinels amid the green mountain meadows.

The town of Glacier, which lies just inside the Forest, is accessible by automobile. From this point the survey of the Glacier-Austin Pass section of the Mount Baker Highway has been completed. This road follows the North Fork of the Nooksack River and ascends Bagley Creek into Austin Pass, which lies midway between Mount Baker and Mount Shuksan, and is the center of one of the most beautiful mountain-meadow regions in the northwestern part of Washington. From Shuksan, at the base of Austin Pass, this road will render many points of interest easily accessible by trail. Among these high spots in the heart of the mountains—splendid camping places and commanding a view of extensive stretches of country—are Twin Lakes, Hannegan Pass, and Welcome Pass. Mount Shuksan, which may be climbed from Austin Pass, is a peak of unusual picturesqueness. Table Mountain, on the other side, is a striking formation, and beyond it lie the Chain Lakes, at the head of Wells Creek.

A trail leads from Glacier to Heliotrope Ridge, a distance of 10 miles. Like a valiant warrior, this slender ridge has thrust its verdant crest deep into the armor of ice which incrusts the slopes of Mount Baker. On both left and right

Glaciers are winding  
Crushing and grinding  
Hurling their tribute  
From dome to the sea.

The tree-flecked slope is covered by a luxuriant growth of mountain heliotrope. A shelter camp which will accommodate from 6 to 10 people has been erected upon the summit of the ridge.

Deming is the nearest outfitting point to Mazama Park, another beautiful camping spot adjacent to Mount Baker on the south. The distance is 24 miles—13 by automobile and 11 by trail. From Mazama Park the mountain can be ascended without great difficulty. There is splendid fishing in Elbow Lake and the South Fork of the Nooksack, easily accessible from Mazama Park.



Down Hannegan Pass

### BAKER RIVER AND LAKE

Baker River empties into Skagit River near the town of Concrete. Baker Lake is 18 miles from Concrete, and is reached by trail on the east side of the river. For trips to the lake or other points in this region, saddle and pack animals can be secured in Concrete, also packers and guides. The trail passes splendid camping grounds, where water and fuel are abundant. Baker Lake itself is about  $1\frac{1}{2}$  miles long by 1 mile wide, with ideal camping places along the lakeside. Mount Baker, with its eternally snow-covered dome, and Mount Shuksan may be seen in the wonderful lake reflections, thought by many to be equal to any in the world. Baker Lake is the only known spawning ground of the sockeye salmon in the United States. A Federal fish hatchery is located here.

### CASCADE RIVER—CASCADE PASS

Cascade River, entering the Skagit near Marblemount, is a beautiful glacier-fed stream. It traverses fine river bottoms where there are splendid camping places, and runs through canyons with excellent waterfalls and rapids. Fishing

is good for Dolly Varden, rainbow, and steelhead trout in season. Salmon are taken nearly every month of the year near the foot of the first falls, 8 miles from Marblemount. Marblemount, 10 miles by automobile from Rockport, the railroad terminus, is the logical outfitting point for a trip to the Cascade River watershed. At Marblemount are two hotels, a store, and a post office. Guides and packers will furnish saddle or pack animals for large or small parties.

Cascade Pass, at the head of the river, 25 miles from Marblemount, is a beautiful flower-covered park, where fascinating camping spots are numerous. Although it is not considered a particularly good hunting country, game is present at all times. Mountain goat are found on the highest elevations of the surrounding mountains. Through Cascade Pass the trip may be continued to Lake Chelan.

Mineral Park, an abandoned mining camp 18 miles from Marblemount, has still an interest for the tourist, although 25 years have elapsed since the silence of the hills was broken by the sound of the miners' pick and shovel. Here are sluice boxes, gold pans, and decaying and crumbling prospectors' cabins, mute witnesses of their owners' blasted hopes of great wealth. The trail which runs on the north side of the river and up the north fork is well posted with signboards, as are also all cross and branch trails, so the traveler may not get lost. A telephone line follows the trail as far as Mineral Park, and may be used by tourists in case of need.

### SUIATTLE RIVER

Sauk is the railroad point from which to start this trip. A wagon road leads to Sauk Crossing, where one must ford his saddle or pack animals to the east bank of the Sauk River in order to take the trail leading up the Suiattle River proper. The horses and ponies must swim and the travelers cross in an Indian canoe. This ford is dangerous at all times to those unacquainted with it, and should not be attempted unless there is an experienced white man or Indian present. Once across the river, there is an excellent trail leading to the Suiattle Pass, 48 miles from Sauk, where one may leave the Washington and enter the Chelan National Forest.

The Suiattle River is a poor trout stream except to the bait fisherman. However, its tributaries are teeming with game fish, where the man who must make his catch with a fly or not at all may have glorious sport. Good fishing





Skagit River bridge—Washington National Forest

streams are Big Creek, 15 miles from Sauk; Tenas Creek, 18 miles; Buck Creek, 25 miles; Downey Creek, 33 miles; Sulphur Creek, 35 miles; and Canyon Creek, 41 miles. Milk Creek, which flows into the Suiattle from the south, off the slopes of Glacier Peak, is a "white water" stream and worthless for fishing.

The Suiattle River Indian tribe, whose ancestors have hunted and fished on the watershed for untold generations, add to the interest of this trip. They are pure-blooded Indians, uncontaminated to any extent by association with white men, and furnish a splendid opportunity for a study of the barbarian in his native haunts. The Suiattle River Indian will not disturb your camp or steal anything, no matter how long you may be absent. However, the camper must watch the Indian dogs and place everything edible out of reach. Otherwise something good to eat may be stolen right before his eyes.

One may obtain a fish basket of any size or design, woven by one of the squaws. These Indian fish baskets can not be excelled in appearance or durability by any found in sporting-goods stores.

For the nature lover the headwaters of Suiattle River offer some very beautiful scenes. Glacier Peak, with its shining crown of ice, is justly noted for its beauty. The meadows and parks of Huckleberry Mountain are easily reached by horse trail and offer some of the finest camping places in the State. Ten days to three weeks are not too long to spend on this trip. Three days are required to go to the headwaters of the Suiattle from Sauk, and tourists should make several side trips of a day each before returning. Fuel and water are abundant and handy, and grass and pasturage for ponies are plentiful. A telephone line extends as far as the Suiattle Ranger Station, just above Buck Creek.

### ILLABOT CREEK AND LAKE

Rockport is the logical starting point. One can go as far as the mouth of the creek by saddle horse or automobile. Packers, guides, and horses are available at Rockport. Fresh vegetables, milk, butter, and eggs may be obtained from farm-houses near the mouth of the creek.

If a short camping or fishing trip is desired, Illabot Creek is one of the best situated and most accessible places on the Washington National Forest. There are fine camping spots near the mouth of the creek, which enters the Skagit from



Camp Chalet—public camping grounds near the Olympic Ranger Station—Washington National Forest

the south, about 6 miles from Rockport. It also lends itself to long outings, since a trail leads 10 miles up the creek to Illabot Lake, where fishing is excellent.

The camp grounds at the lake are specially attractive in their setting of lofty snow-clad mountains and beautiful glaciers. All kinds of salmon and salt-water trout enter Illabot Creek to spawn, and a branch of the United States fish hatchery system of spawning sheds has been built at the mouth of the creek, where steelhead trout and salmon are caught to supply other hatcheries with eggs. It is an interesting sight to see the fish trapped and taken care of until they are ripe for spawning.

In the upper Skagit region Cedar Bar, Deer Park, and Ruby Creek offer excellent camping places from which attractive side trips may be taken. Good horse trails will be found nearly everywhere one wishes to go, and telephone lines are available in many parts of the Forest.

The Forest Supervisor's headquarters is in the Federal Building, Bellingham. Rangers are stationed at Darrington, Marblemount, Concrete, and Glacier



## WENAHU NATIONAL FOREST

THE Wenaha National Forest occupies the most northerly spur of the Blue Mountains, which forms the divide between Grande Ronde River on the east and Walla Walla, Touchet, and Umatilla Rivers on the west. The main divide runs in a northeasterly and southwesterly direction, and can be traveled on horseback for its entire length, approximately 130 miles. Camping places, where good water and horse feed can be found, are numerous.

The elevations vary from 4,500 feet to 6,500 feet. The higher peaks are not abrupt, but mound-shaped and with more or less of a plateau on top. The highest of these is Oregon Buttes, 6,500 feet, with Mount Misery, 50 feet lower, a close second, and Mount Emily, 6,130 feet, third. The larger portion of the Forest is but lightly timbered. The south and east slopes are invariably open and covered with good stands of bunchgrass. The country is rather rugged, the ridges steep, and the canyons deep and narrow.

The gently-rolling cultivated hills surrounding the Forest form one of the best grain-growing sections of the Northwest. These grain fields, with their check-board effect, are a pleasing sight when viewed from the higher elevations of the main divide.

The Forest is traversed by 140 miles of road passable by automobiles and 568 miles of primary and secondary trails, which make every part of the Forest accessible for horseback trips.

Mule deer, black bear, brown bear, cats, coyotes, blue grouse, and pheasants are plentiful. Fishing is good in the numerous streams. Hunting and fishing are prohibited in approximately two townships of the northern portion of the Forest, which have been set aside as a county game preserve. Mule deer, elk, blue grouse, and pheasants are plentiful in this preserve. The deer and grouse scatter over the surrounding country, consequently good hunting can be had there during the open season. A herd of approximately 240 elk ranges in this vicinity. Protected by the law at all times, they are very tame. It is not uncommon to meet from 10 to 50 of them, and camera hunters are often able to secure pictures of bands of these splendid animals.

The Forest is accessible from the following railroad points on the Oregon-Washington Railway & Navigation Co.'s line: Asotin, Clarkston, Dayton, Pome-



The camera hunter takes a shot

roy, and Walla Walla, Wash.; and Pendleton, La Grande, Elgin, and Wallowa, Oreg. These places are also outfitting points, where supplies and pack outfits may be obtained.

Tollgate is a popular summer camping place. It is located on the divide and reached by the Woodward toll road. This road is the only one that crosses the Forest, and is the principal highway between Walla Walla and towns located in the Grande Ronde Valley. It is a fair automobile road and can be used during the summer months.

Godman Springs is another camping place accessible by automobiles. It bids fair to become one of the most popular camp grounds on the Forest. It can be reached from Dayton, Wash., in an hour. It is expected that by 1921 a more direct route from Walla Walla will be completed, making Godman Springs accessible from the southwest. An automobile road along the summit of the Blue Mountains is now under construction. This will extend from Godman Springs south to Tollgate, on the old Woodward toll road, a distance of over 40 miles.

Bingham Hot Springs, 32 miles east of Pendleton, Oreg., on the Umatilla River, is easily reached by automobile from Walla Walla or Pendleton. The resort has hotel, dance hall, swimming tank, summer cottages, and camping grounds. Good fishing can be had near by on the Umatilla River and its tributaries. Bingham Hot Springs is 7 miles west of Gibbon, on the main line of the Oregon-Washington Railway & Navigation Co. An automobile stage meets the trains during the summer season.

The Wenaha River and its tributaries offer some of the best hunting and fishing on the Forest. Rainbow and Dolly Varden trout are plentiful at certain seasons. The best fishing is found at the most inaccessible places. Fishing and hunting parties can pack out of Troy, a small village with a hotel and store at the mouth of the Wenaha River. There is a good trail up the river and fair trails lead up its tributaries. Troy may be reached from Asotin, Wash., by a 50-mile drive, or from Wallowa, Oreg., by an automobile stage that leaves Wallowa Mondays, Wednesdays, and Fridays for Troy, returning the following day. The distance between Wallowa and Troy is 37 miles.

Asotin Creek, accessible by automobile from Asotin and Clarkston, is the favorite fishing stream. A road passable for motor cars extends about 12 miles up Asotin Creek to a pack trail about 8 miles beyond the road.

Tucannon River may be reached from Pomeroy or Starbuck by automobile and offers excellent fishing. There are numerous camp grounds along its banks.

The upper Touchet River can best be reached by automobile from Dayton, through which it flows. Passable roads extend some distance up its tributaries.

Mill Creek and Walla Walla River are the streams nearest Walla Walla. Roads along these streams extend nearly to the Forest boundary. The best fishing, however, is beyond the end of the roads and is reached only by horse or afoot.

Meacham Creek, along the main line of the Oregon-Washington Railway & Navigation Co., between Pendleton and La Grande, offers excellent fishing early in the summer. All the streams are stocked annually with fry furnished by State hatcheries.

The Forest Supervisor's headquarters is in the Federal Building, Pendleton, Oreg. Rangers' headquarters are at Dayton, Pomeroy, and Walla Walla, Wash., and La Grande, Oreg.



## WENATCHEE NATIONAL FOREST

THE Wenatchee National Forest includes the mountainous portion of the watersheds of the Wenatchee, Entiat, Teanaway, Cle Elum, Kachess, and Upper Yakima Rivers, and Naneum and Swauk Creeks. It is roughly 70 miles long and 50 miles wide, extending from the summit of the Cascade Mountains to the breaks of the Columbia River, and from Glacier Peak to the Yakima River.

Water derived from the streams of this Forest irrigates about half a million acres of land in the Wenatchee, Kittitas, and Yakima Valleys.

The whole Wenatchee Forest is a great playground for the use of the people, with excellent hunting, fishing, and camping, and quiet resting places. Its lakes and streams, its quiet glens and sheltered nooks, its glaciers and meadows, its deep canyons and rugged peaks, offer the widest variety from which to choose a summer outing.

Within its boundaries are four large lakes—Wenatchee, Keechelus, Kachess, and Cle Elum—and hundreds of smaller ones, offering many opportunities for summer home sites and other recreation uses.

Mount Stuart, 9,470 feet in elevation, is the highest point within the boundaries of the Forest. Glacier Peak, 10,436 feet high, just outside its northern end, is most easily reached through this forest from Leavenworth.

Three transcontinental railroads—the Great Northern, Chicago, Milwaukee & St. Paul, and Northern Pacific—cross the forest. The Sunset Highway and Blewett Pass road furnish a beautiful automobile trip through it. Many other roads passable by automobile penetrate far into the heart of the forest, up the glacial valleys of the various streams, and to attractive camping places and summer-home sites.

The Government is spending thousands of dollars in this locality each year to protect the timber and other resources of this forest. It is public property which the Forest Service holds in trust. All are free to use the camping places, and are welcome to wood needed for camp fires, grass for horses, and to fish in the streams and hunt in the mountains in accordance with the game laws of the State. The Forest Service trails are open for your use. Its telephone lines may be used in case of sickness, accident, or other emergency. You can help the Forest Service by using them to report fires or other danger to the nearest ranger or to the supervisor, whose office is at Wenatchee, Wash.

The new road over Blewett Pass, which is nearing completion, has a maximum grade of 5 per cent and furnishes one of the most attractive and beautiful drives in the Northwest. This is a Forest road, built in cooperation by the Forest Service, the State of Washington, and Chelan and Kittitas Counties. An automobile tourist can easily make the trip from Seattle to Wenatchee by way of Snoqualmie and Blewett Passes in 12 hours. A fairly well-developed system of trails gives access to all parts of the Forest, so that foot or pack-horse trips may be taken in any direction.

Icicle Creek, which enters the Wenatchee River at Leavenworth, is a splended trout stream, with a Forest Service trail extending from its mouth to its head. The Chiwawa River, another fine trout stream, is accessible by automobile from Leavenworth over a road which extends to its headwaters.

Tourists who enjoy wide vistas from the high points should visit some of the fire lookout stations which are accessible by trail. Tumwater Mountain,  $4\frac{1}{2}$  miles north of Leavenworth, is reached most easily. Other lookout points on the Wenatchee are Dirtyface Peak, at Lake Wenatchee; Sugar Loaf Peak, at the summit of the Entiat Range; Tiptop, near the old mining town of Blewett; Redtop, on the Teanaway Ridge; Jolly Mountain, on the divide between the Middle Fork Teanaway and Cle Elum Valleys; and Mount Margaret, on the high ridge between Lakes Keechelus and Kachess.

Lake Keechelus is skirted from end to end by the Chicago, Milwaukee & St. Paul Railway on its west side and the Sunset Highway on its east side. Here are good fishing and hunting in season, beautiful camping places, and sites for summer homes. At Keechelus Inn and Sunset Tavern, each operating under a special-use permit, good meals and beds may be obtained by tourists; also repairs and supplies for automobiles. Huckleberries may be secured by climbing to the upper ridges. Lake Kachess has a hotel at its upper end, reached by a short road built in from the Sunset Highway.

A good automobile road extends from Cle Elum, through Roslyn, to Lake Cle Elum and on up the Cle Elum Valley to Salmon Lasac. From here Copper and Waptus Lakes may be reached on foot or horseback. These afford very fine sport, and the scenery about them is alone worth the trip. Fish and Hyas Lakes,



Forest and stream

at the head of the main fork of the Cle Elum River, are now closed to fishing under the State laws.

Another good automobile road extends from Leavenworth to Lake Wenatchee, 30 miles. Here there is a choice of two hotels or camping. A number of Cashmere and Wenatchee people have erected cottages at Lake Wenatchee, and a summer colony is developing. Horse feed can be secured from farmers; and milk, eggs, and fresh vegetables can usually be obtained during the recreation season. A fine soda spring, 8 miles up the Little Wenatchee River, above the head of the lake, is accessible by a trail which continues on to the head of the river, at Cady Pass. The fishing along this stream is good, and berries are plentiful.

The Forest Service has laid out lots at Lake Kecheelus, Lake Kachess, and Cle Elum Lake for summer-home sites. These lots are accessible by automobile road and railroad, and are near attractive recreation features, such as boating, fishing, swimming, camping, and mountain climbing. The fresh mountain air,





A mantle of timber

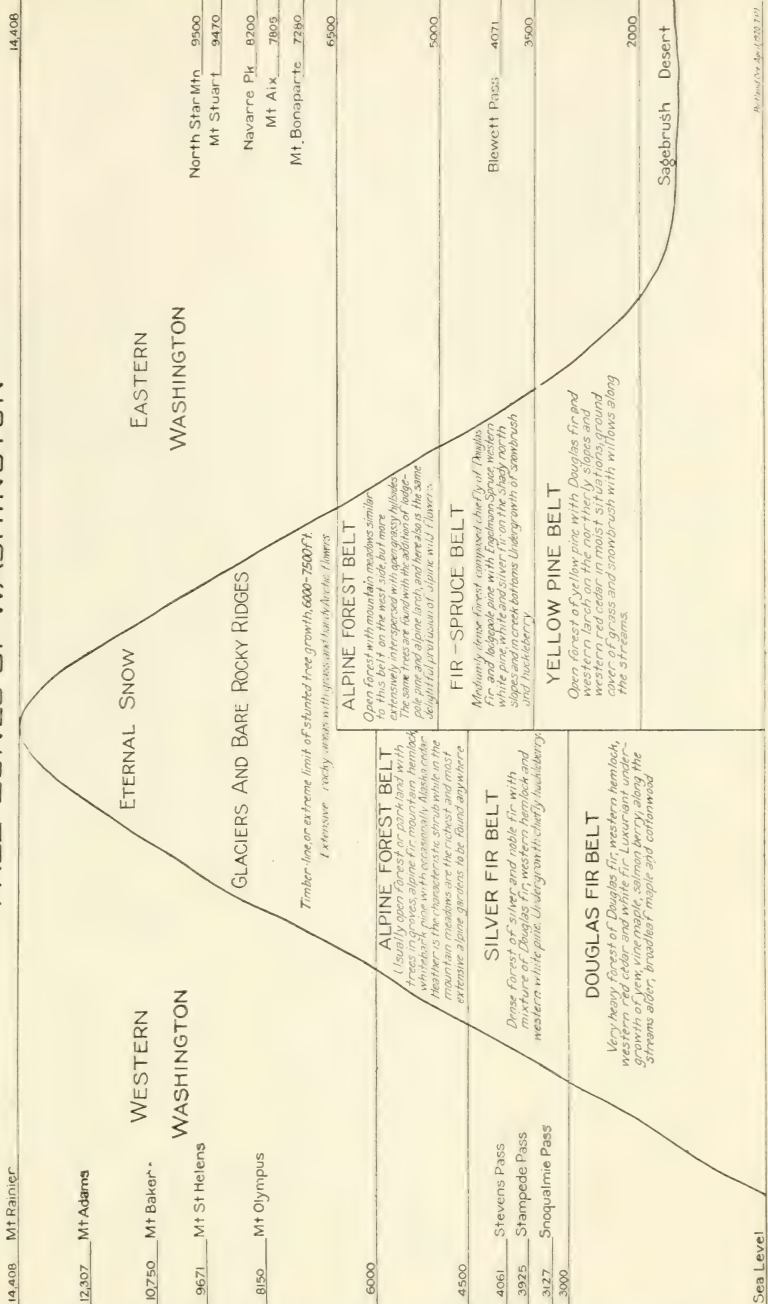
pure water, and healthful surroundings are all conducive to renewed health and vigor. Care with fire and proper sanitation are the only restrictions. Smaller tracts have been platted elsewhere, and as a rule isolated areas may be rented if desired.

The Rocky Run public camp ground, on the Sunset Highway at Lake Keecheelus, is a popular stopping place for touring parties. Along the road horse feed can usually be found wherever night overtakes the traveler, except on the Little Wenatchee, White, and Cle Elum Rivers, where it is necessary to go well toward the head of the streams before grass is found in abundance.

The Silver Creek camp ground, at the end of the road up the Entiat Valley, has become very popular with local people because of its beauty and convenience, the attractiveness of the trip, and the good fishing in its vicinity. About 3,000 people registered there during 1919.

Headquarters of the Forest Supervisor is Post Office Building, Wenatchee, Washington. Rangers are stationed at Leavenworth, Easton, Liberty, Telma, and Chiwaukum.

# TREE ZONES OF WASHINGTON



OUTFIT AND CLOTHING SUGGESTIONS

Suit: Preferably of some strong material, such as khaki, whipcord, or overall.  
Mackinaw or sweater.  
Medium-weight underwear.  
Socks: Two pairs medium weight or one pair heavy.  
Shirt: Flannel or khaki, light or medium weight.  
Shoes: Stout, easy, with heavy soles.  
Boots.  
Leggings: Canvas or leather if shoes are worn instead of boots.  
Buckskin gloves.  
Beds: Air beds are comfortable where they can be carried, since they can be placed even on bare rocks.  
Bedding: The most serviceable is a quilt of eiderdown or wool with an extra covering of denim. The quilt can be sewed or pinned with blanket pins along the bottom to form a sleeping bag. If blankets are chosen it should be borne in mind that two light ones are warmer than a single heavy one.  
A 7 by 7 foot, 10-ounce canvas, when folded, will make a ground cloth and an extra cover, and is also useful as a pack cover. The Army "shelter half" is preferred by some.

FOOD SUPPLIES

The following list prepared in the Forest Service may be used as a guide in purchasing food supplies. The weights listed are for one man for one day. The amounts for a party for any length of time can easily be computed.  
All weights are net (i. e., weight of contents exclusive of containers):

COMBINATION RATION LIST—ONE MAN ONE DAY

Balanced ration, one man one day.	Quantity.	Weight in pounds.	Equivalent substitutes.	Quantity.	Weight in pounds.
Beef, fresh.....	I. 25	I. 25	Mutton or pork, fresh, or venison.....	.....	I. 25
			Bacon.....	.....	. 6
			Ham.....	.....	. 8
			Canned meat.....	.....	I. 0
			Canned fish.....	.....	I. 0
			Dried fish.....	.....	. 9
			Eggs.....	¾ doz..	I. 50
			Fowls or game birds, dressed.....	.....	I. 50
			Fresh fish, cleaned.....	.....	2. 0
			Cheese.....	.....	. 6
			Peanuts (with shells).....	.....	. 7



## COMBINATION RATION LIST—ONE MAN ONE DAY—Continued

Balanced ration, one man one day.	Quantity.	Weight in pounds.	Equivalent substitutes.	Quantity.	Weight in pounds.
Cheese.....		0.06	Meat, fresh.....		0.12
			Sweet chocolate.....		.06
			Dried peas, lentils, etc.....		.2
Beans.....		.2	Rice or hominy.....		.2
			Baked beans, canned.....		.5
			Bread, baker's.....		1.0
			Pancake flour.....		.8
Flour.....		.8	Hard-tack or pilot bread.....		.7
			Crackers.....		.75
			Corn meal.....		.8
			Macaroni, spaghetti, etc.....		.7
Baking powder.....	¾ oz.....	.048	Dry yeast (for yeast bread).....	¼ cake.	.012
			Soda (for sour dough).....	2 oz.....	.012
Oat meal.....		.15	Cream of wheat, corn meal, etc.....		.17
			Grape nuts, corn flakes, etc.....		.17
			Dried potatoes (evaporated).....		.15
Potatoes, fresh.....		.8	Dried beans, lentils, peas, etc.....		.2
			Rice or hominy.....		.2
Fresh vegetables (as- sorted) (o n i o n s, turnips, beets, cab- bage, etc.).		.45	Canned peas or corn.....	¼ can..	.31
			Canned tomatoes.....	¼ can..	.47
			Dried or desiccated vegetables.....		.25
			Potatoes (added to staple al- lowance).		.40
			Dried apples.....		.15
			Raisins or currants.....		.15
Prunes (dried).....		.25	Dried peaches, figs, or apricots.....		.2
			Canned fruit.....	⅓ can..	.65
			Jam.....		.2
			Fresh fruit.....		.8
Coffee (ground, or sol- uble coffee).		.13	Tea.....	½ oz....	.03
			Chocolate or cocoa.....		.08
			Lemons.....	¼ doz..	.65

## COMBINATION RATION LIST—ONE MAN ONE DAY—Continued

Balanced ration, one man one day.	Quantity.	Weight in pounds.	Equivalent substitutes.	Quantity.	Weight in pounds.
Sugar (if no dried fruit is used, allowance may be reduced to 0.2 pound).		0.35			
Sirup <sup>1</sup>	$\frac{1}{12}$ pt....	.08	Molasses.....	$\frac{1}{12}$ pt....	0.07
			Honey.....		.08
			Sugar (white or brown).....		.05
Milk (evaporated).....	{ Can, $\frac{1}{8}$ pt. }	.33	Fresh milk.....	$\frac{2}{3}$ pt....	.66
			Condensed milk.....	$\frac{1}{3}$ pt....	.2
Butter.....		.13	Peanut butter.....		.13
			Oleomargarine.....		.13
			Lard substitutes.....		.10
Lard.....		.10	Bacon grease (can be saved if bacon is substituted for fresh meat).		.10
Salt.....	$\frac{2}{3}$ oz....	.04			
Pepper, black.....	$\frac{1}{17}$ oz....	.004	Red pepper.....	$\frac{1}{50}$ oz....	.0013
Pickles <sup>1</sup> .....	$\frac{1}{17}$ pt....	.05	Vinegar.....	$\frac{1}{25}$ pt....	.04
			Ginger.....	$\frac{1}{25}$ oz....	.003
Spices (cinnamon) <sup>1</sup> .....	$\frac{1}{25}$ oz....	.003	Nutmeg.....	$\frac{1}{25}$ oz....	.003
			Cloves.....	$\frac{1}{25}$ oz....	.003
			Mustard.....	$\frac{1}{25}$ oz....	.003
Flavoring extract (vanilla). <sup>1</sup>	0.03 oz.	.002	Lemon.....	0.03 oz.	.002
Cornstarch <sup>1</sup> .....		.2	Tapioca.....		.02
Bouillon cubes.....	0.1 oz.		Maggi soups.....	$\frac{1}{2}$ pkg..	.05
Total weight, 5.223. <sup>2</sup>			Canned soups.....	$\frac{1}{4}$ can..	.25

<sup>1</sup> Suggestive rather than essential: their use may be governed largely by individual taste, size of party, and duration of trip.

<sup>2</sup> A much lighter ration can be made up by substituting the more concentrated foods within each class. As a rule, rations made up entirely of the most concentrated foods should be avoided.

Suggested accessories are soap, dish towels, hand towels, matches, candles, paper bags for lunches, and cloth bags for sugar, rice, beans, etc.

The following table has been prepared by the Forest Service and will serve as a handy reference and guide for campers. The needs of two, four, six, or eight persons are separately provided for.

Column A indicates a complete equipment, all that would be considered necessary and convenient for a stay of a month or more; or in case transportation is not restricted as to weight.

Column B indicates an average equipment which will serve the purpose very handily for a week or 10 days, and will do for a longer stay. It is suitable for a pack-horse trip.

Column C indicates a minimum equipment, one that is really insufficient to meet the ordinary needs of a camping party, but which will suffice for a short stay and very simple cooking. It is such an outfit as a party of practical woodsmen might take and get along with in case the packing facilities were very limited as to weight, such as a man-pack trip.

#### COOKING AND MESS EQUIPMENT FOR VARIOUS-SIZED CAMPS UNDER VARYING CONDITIONS

Item.	For 2 men.			For 4 men.			For 6 men.			For 8 men.		
	Col. A.	Col. B.	Col. C.	Col. A.	Col. B.	Col. C.	Col. A.	Col. B.	Col. C.	Col. A.	Col. B.	Col. C.
<b>COOKING EQUIPMENT.</b>												
Cooking pails: <sup>1</sup>												
2-quart. ....			I									
3-quart. ....	I	I	I			I						
4-quart. ....	2	I	I	I	I	I			I			
5-quart. ....	I	I		I	I	I	I	I	I			
6-quart. ....		I		I	I	I	I	I	I	I	I	I
7-quart. ....				I			I			I	I	I
8-quart. ....	I				I		I	I	I		I	
9-quart. ....										I		I
10-quart. ....				I			I	I		I	I	I
12-quart. ....										I	I	I
14-quart. ....										I		
Frying pan <sup>2</sup> No. 2 (9-inch diameter).....	2	2	2									

<sup>1</sup> It is desirable to have pails of nesting sizes. At least one medium-sized pail of enamel or aluminum ware is recommended for cooking fruits. Stew kettles with bails may be substituted for pails, but usually do not nest as conveniently.

<sup>2</sup> Frying pans with detachable handles are more convenient for packing.



COOKING AND MESS EQUIPMENT FOR VARIOUS-SIZED CAMPS UNDER VARYING CONDITIONS—Con.

Item.	For 2 men.			For 4 men.			For 6 men.			For 8 men.		
	Col. A.	Col. B.	Col. C.	Col. A.	Col. B.	Col. C.	Col. A.	Col. B.	Col. C.	Col. A.	Col. B.	Col. C.
COOKING EQUIPMENT—Continued.												
Frying pan <sup>1</sup> No. 5 (11-inch diameter).....				2	2	2						
Frying pan <sup>1</sup> No. 6 (12-inch diameter).....							2	2	3	1		
Frying pan <sup>1</sup> No. 7 (13-inch diameter).....										2	2	2
Extra fry pan, reflector, Dutch oven, or stove <sup>2</sup> .....	I			I	I		I	I		I	I	I
Coffee pot, <sup>3</sup> 2½ quarts.....	I	I										
Coffee pot, <sup>3</sup> 3 quarts.....				I	I							
Coffee pot, <sup>3</sup> 5 quarts.....							I	I				
Coffee pot, <sup>3</sup> 6 quarts.....										I	I	
Butcher knives <sup>4</sup> .....	I	I		I	I	I	2	2	I	2	2	I
Paring knives <sup>4</sup> .....	I	I		I	I	I	I	I	I	I	I	I
Stirring spoons.....	I	I		2	2	I	2	I	I	2	2	I
Meat fork.....				I			I	I		I	I	
Can opener <sup>4</sup> .....	I	I		I	I	I	I	I	I	I	I	I
Dish pan (use milk pans for small parties).....	I			I	I		I	I		I	I	I
Wash basin <sup>5</sup> .....	I	I		I	I		2	I		2	I	I
Mixing pan.....	I			I	I		I	I		I	I	
Bread board <sup>6</sup> .....				I			I	I		I	I	
Rolling pin <sup>7</sup> .....				I			I			I		
Egg beater.....							I			I		
Pancake turner.....				I			I			I		
MESS EQUIPMENT.												
Plates.....	6	4	2	8	7	6	12	10	8	12	12	11
Cups.....	4	3	2	6	5	5	8	8	7	10	10	9
Saucers.....	3			5			8			10	2	2

<sup>1</sup> Frying pan, with detachable handles are more convenient for packing.

<sup>2</sup> The choice of an extra fry pan, reflector, Dutch oven, or stove for baking can best be made by the camper. If reflector or stove is to be used, bread pans of proper dimensions must be added to the list.

<sup>3</sup> Pails of similar size are frequently a desirable substitute, as they will usually nest better with the rest of the outfit.

<sup>4</sup> A jackknife may cover all needs.

<sup>5</sup> A pudding pan is a possible substitute and nests better.

<sup>6</sup> Canvas tacked onto box siding or shakes makes a fair substitute and may save from 6 to 8 pounds in weight.

<sup>7</sup> A pint or quart bottle makes an excellent substitute.

## COOKING AND MESS EQUIPMENT FOR VARIOUS-SIZED CAMPS UNDER VARYING CONDITIONS—Con.

Item.	For 2 men.			For 4 men.			For 6 men.			For 8 men.		
	Col. A.	Col. B.	Col. C.	Col. A.	Col. B.	Col. C.	Col. A.	Col. B.	Col. C.	Col. A.	Col. B.	Col. C.
MESS EQUIPMENT—Continued.												
Bowls.....	3			5			8			10	8	
Knives.....	4	3	2	7	6	5	9	8	7	12	10	9
Forks.....	3	3	2	5	5	4	8	7	6	10	10	9
Spoons, tea.....	3	1		5			7			10	8	
Spoons, dessert.....	2	2	2	6	6	5	8	8	7	10	10	10
Spoons, table.....	2	2		3	2	1	3	3	1	4	2	1
Pans (serving dishes), 2 quarts.....	2	2	1	1	1	1	2	1	1			
Pans (serving dishes), 3 quarts.....	1			2	2	1	2	3	2	3	3	2
Pans (serving dishes), 4 quarts.....				1			2	1		4	3	2
Pitchers, milk.....				1			1			1		
Pitchers, sirup.....				1			1			1		
Salt and pepper shakers.....	1			1			1	1		2	2	
Approximate weight, <sup>1</sup> pounds.....	20	13½	7	35	21	13	43	34	19½	62	46	30

<sup>1</sup> Weights figured on basis of using "extra fry pan" instead of reflector or stove and using moderately heavy tin for all containers except one medium-sized pail and from one to three pans in enamel ware. Total weight would be increased about one-fourth by using all enamel ware; by using aluminum, it may be reduced about one-third.

Accessories which may be added are: Wire, or light chains with hooks for hanging pots; oilcloth for table; 1 canvas water bucket (weight  $\frac{3}{4}$  to 1 pound).

Miscellaneous camp equipment to be selected according to needs: Shovel, ax or hatchet, assorted nails, lantern, canteens, 6-inch files, whetstone, rope, twine.

## CAMP COOKERY

COOKING FIRE FOR A SMALL CAMP<sup>1</sup>

There are many ways of building the cooking fire. The essential in each case, however, is a good permanent draft; but do not build the fire against a log or a tree or in a place where it may spread. The draft may be secured best by the method usually employed in sheep camps. The site is chosen and an excavation is made, the soil being removed to a depth of 12 inches, or approximately the depth of the shovel. The hole thus made should be at least 3 or 4 feet in width. The side

<sup>1</sup> A portion of the suggestions on cooking and of the recipes is taken from Bulletin 76, "Camp Cookery," of the Oregon Agricultural College.

exposed to the prevailing wind is then shoveled away, allowing the free entrance of air. This opening is the front of the cooking fire. The air going in passes along the side walls to the rear and thence upward, thus perfecting the draft. Select two green poles of sufficient length to extend over the ends of the hole (4 to 6 inches in diameter), one to serve as a back log, the other as a front log. Lay the poles over the hole, spacing them the proper distance to support a camp kettle, frying pan, or coffee pot. Kindle the fire beneath and proceed with the cooking. The poles can be replaced from day to day as they burn away.

When cooking frying-pan bread by reflected heat, usually a dry front pole is preferred to a green one, because the drier pole, being somewhat charred, combines with the hot coals beneath to produce a greater amount of reflected heat.

Be sure to clear away all dead twigs, leaves, or other combustible material for a distance of 6 feet to the fresh mineral soil.

#### CRANE FOR CAMP KETTLE

In constructing a crane for camp kettles the height of the pole should be approximately shoulder high. The kettles should be suspended by pothooks made from small, tough saplings, trimmed to leave a projecting fork to suspend the kettle from the crane, and having at the other end a notch cut or small nail driven in at an angle to hold the kettle bail. No. 9 wire is also good for the purpose. The hook may then be grasped at a sufficient height above the fire to prevent burning the hands. By having pothooks of different lengths the desired intensity of heat can be secured by regulating the distance of the pot from the fire.

#### DUTCH OVENS

In using Dutch ovens, care should be taken that the oven and lid are quite hot enough before the dough is placed in them for baking. During the preparations for baking, the oven and lid should be heated over the fire. When a good mass of coals has been obtained, the dough should be placed in the heated oven (the bottom having been greased) and the lid put on. The oven should then be embedded in the coals and the lid covered with coals and hot ashes.

Instead of a Dutch oven two pans may be used, one large enough to fit snugly over the other as a cover. Plenty of ashes and earth should be piled on top or the bread will burn.



## RECIPES

COFFEE.—Bring water to boiling point; add coffee, one level teaspoonful for each cup of water used, keep in a warm place for five minutes but do not allow to boil. Settle and serve. The coffee may be put in a small muslin bag tied loosely and the bag of grounds removed before serving.

SOLUBLE COFFEE.—Put one-half teaspoon (more or less, according to strength desired) in a cup and add boiling water.

## ARMY BREAD.—

1 quart flour.

1 tablespoon sugar.

1 teaspoon salt.

4 teaspoons baking powder.

Mix the ingredients thoroughly and stir in enough cold water (about one and one-third pints) to make a thick batter. Mix rapidly with a spoon until smooth and pour out at once into a Dutch oven or baking pan. Bake about 45 minutes, or until no dough adheres to a sliver stuck into the loaf.

## FRYING-PAN BREAD.—

1 cup flour.

1 tablespoon sugar.

1 teaspoon salt.

3 teaspoons baking powder.

Mix and add enough water to make a thick dough. Pour into well-greased, hot pan and set flat near the fire. In a few minutes it will rise and stiffen. Prop the pan nearly perpendicular before the blaze; when brown one side, turn over. A clean silver fork stuck through the center of the loaf will come out clean if the bread is sufficiently baked.

FRYING.—Rake a thin layer of coals out in front of the fire; or for a quick meal make the fire of small, dry sticks and fry over the quickly formed coals.

If a deep pan and plenty of frying fat are available, it is best to immerse the material completely in boiling grease as doughnuts are fried. Let the fat heat until little jets of smoke arise (being careful not to burn the grease), then quickly drop in small pieces of the material, one at a time so as not to check the heat, turn them occasionally while cooking. Remove when done and place on a coarse paper that will absorb surplus fat. The above method is an excellent way to cook small fish.

When only shallow pans and little grease are available, to fry (or, properly, to saute) in this manner without getting the article grease-cooked, heat the dry pan very hot and then add just enough grease to keep the meat from sticking (fat meat

needs none). The material should be dry when put into the pan or it will absorb grease. Cook quickly and turn frequently. Season when done and serve hot.

**STEWING.**—Stewing is a very desirable way of cooking coarse and tough pieces of meat. Put the meat cut into small cubes into a hot frying pan. Let it brown, add a small quantity of sugar, if desired, and sliced onions. Cook until the onions are tender, then pour the contents of the frying pan into the stew pan, and add enough boiling water to cover the meat and let it simmer gently for two or three hours. Flavor with salt, pepper, herbs, or curry powder. This dish may be thickened with browned flour, and vegetables may be added—turnips, carrots, etc., cut into small pieces and browned with the meat.

**BOILED RICE.**—Wash the rice well and sprinkle into a kettle of salted water, boiling hard all the time. After 15 or 20 minutes, or until a grain feels soft when pressed between the thumb and finger, pour off the water and place the kettle near the fire so that the grains may dry and swell. If cooked longer the rice is likely to become pasty.

**CANNED GOODS.**—Before using canned goods see that the ends of the cans are sunk in. If the ends are swelled or bulgy it usually means fermented contents and spoiled goods. After a can has been opened pour contents immediately into enamelware dish. Never leave food in the original cans.

**DRIED OR EVAPORATED FRUIT.**—Wash and pick over the fruit, soak over night in the water (cold) it is to be cooked in, using only enough water to cover the fruit. Simmer from 2 to 3 hours; sweeten before removing from fire. Do not use an iron vessel, or permit the fruit to boil hard. Keep closely covered.

### SIMPLE DESSERTS

Simple desserts, such as boiled rice served with stewed fruit, or rice cooked in evaporated milk, diluted, and mixed half and half with well-sweetened apple sauce made from evaporated apples, add considerable variety without calling for additional supplies or much extra work. A shortcake could be made with stewed fruit or hot apple sauce, using for the cake the recipe for frying-pan bread. For a change nut bread could be made by adding some broken-up nut meats to the bread dough, or cinnamon buns could be made by adding raisins cut small and spreading sugar and cinnamon over the top before baking.

## DISPOSAL OF REFUSE

Burn all cooking refuse in the camp fire; it will not affect the cooking. Burn everything—coffee grounds, parings, bones, meat, even old tin cans—for if thrown out anywhere, even buried, they will attract flies. Refuse once burned will not attract flies.

If burning is impracticable, dig a hole for the refuse, leaving the earth piled up on the edge, and cover every addition with a layer of dirt.

## PACKING

The pack saddle is firmly cinched; the portions of the outfit are carefully suspended upon it; and the whole is secured by a rope with a single hitch, which is so tied as to bind the load to the animal. The usual pack saddle is of the sawbuck type, as shown in the illustrations on page 69. Care should be taken in saddling the animal. Too many blankets are as bad as not enough, for either cause a sore back. The blanket should be rinsed out in cold water and hung up to dry without wringing. If dried in this manner and carefully folded, it can be kept from wrinkling without much difficulty. The horse's withers should be examined after the saddle is cinched; and if the forks of the saddle are not free, more blankets should be used on the side of the horse under the bottom of the saddle. A single-cinch saddle with breeching and breast straps is preferred, although double-cinch saddles are used. The saddle should be kept tightly in place and evenly balanced.

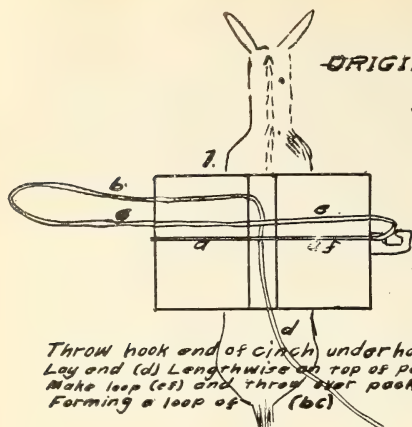
In figure 10 are shown two canvas pads with leather corners, filled with grass, and cross ribs to support the canvas. Figure 9 shows the underside of this pad and the leather-bound holes in the center for placing over the horns of the saddle. Figure 8 shows the outside of this pad with hardwood rib on each side. If a little care is taken in placing fresh hay in these pads from time to time, sore ribs on pack animals may be prevented. The pads make an excellent protection for the horse in packing supplies in boxes, etc. Bear or elk grass is preferred for filling.

The rope shown in figure 10 is known as the sling rope and is only to be used where alforjas are not available. Figure 11 shows the sawbuck pack-saddle rigged with these sling ropes without the canvas pads. Figure 12 shows how such a sling should be tied. Two half hitches are taken in the middle of the sling rope and dropped over the front crosstree. The ends are then looped over the rear crosstree

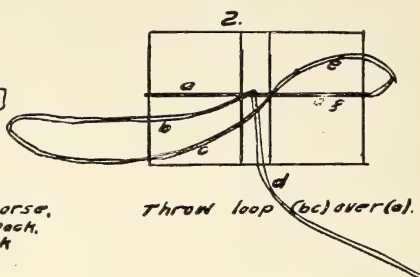


# ORIGINAL DIAMOND HITCH

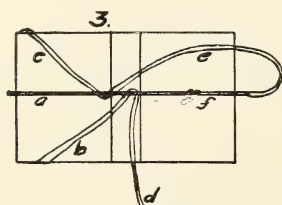
Cy J. Bingham



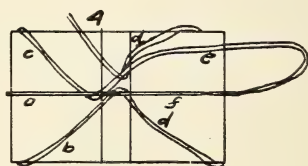
Throw hook end of cinch under horse.  
Lay end (d) lengthwise on top of pack.  
Make loop (ef) and throw over pack  
Forming a loop of (bc)



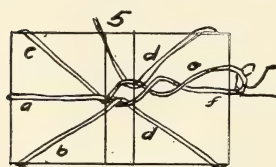
Throw loop (bc) over (a).



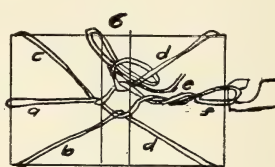
Throw (c) over (b) and  
under (a) and form  
loop around left side of pack



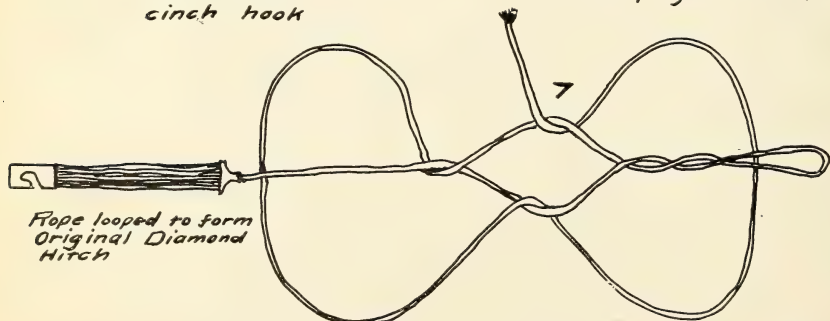
Carry end (d) under right  
side of pack and thread un-  
der (e) on top of pack.



Twist (es) and hook in  
cinch hook



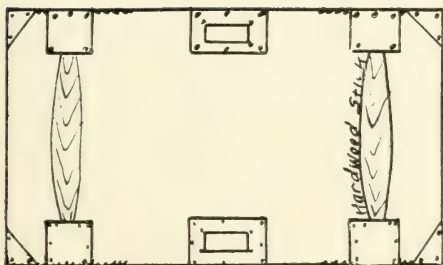
Cinch, tighten and tie



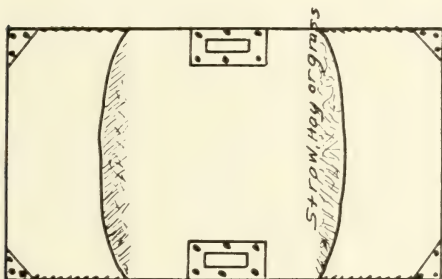
Rope looped to form  
Original Diamond  
Hitch

Figures illustrating details of the diamond hitch.

8



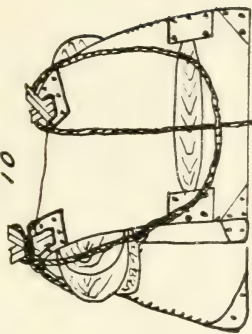
9



Upper Side of Canvas Pad

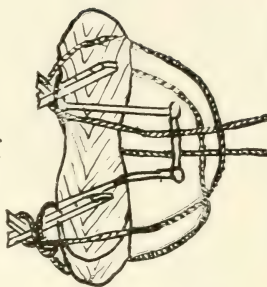
Sixty-Nine

10



Sawbuck Saddle Equipped with Canvas Pad and Slings Ready for Packing

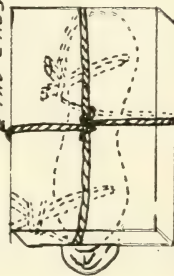
11



Sawbuck Saddle with detail of Slings

12

Two ends drawn tightly together and tied



Box Slung to Sawbuck Saddle by Slings

Figures illustrating pack saddle of the sawbuck type.

to form the slings from which the packs are hung. The sling is adjusted to the proper position, and when both side packs have been slung the ends of the sling rope are tied together across the center of the saddle.

Too much care can not be used in arranging the pack before loading it on the animal. The side packs should be as evenly balanced as possible, either in alforjas or boxes. They should hang well down on the sides and not up on the back of the pack animal. Light stuff, such as bedding, camping utensils, etc., may be placed on top, but be sure that the bulk of the load is well down on the side, as this has a tendency to give the animal more perfect control of the load in making a quick move, such as jumping logs or ravines. If the load is all on top, the animal, no matter how quiet and careful, is bound to hurt its back from the free-pivot swing of the saddle and load.

The original diamond hitch, as shown in figure 7, on page 68, may be thrown by one or two persons. When loosened and taken from the horse there are no knots or tangles to be taken out of the rope. The load may be tightened in a few seconds when one has had a little practice. Figure 1 shows the first move to be made with the rope. If one person is packing, he should stand on the off side of the horse to start. If there are two persons, the one on the near side is the one to start the operation. Figure 2 shows the position of the rope after it has been hooked. Figure 3 shows the position of the rope after it is placed under the corner of the alforja or pocket. Figure 4 shows how it looks on both sides. Figure 5 shows the rope as tightened, while figure 6 shows the rope tightened and made fast.

## FISH AND GAME PROTECTION

The heavily timbered areas of Washington are the natural game sanctuaries of the State. These areas are largely within the National Forests, and are subject to the protection which goes with true forest conservation, which insures to the sportsman and the public in general not only good hunting grounds but a permanent supply of wild game. The fish and game laws applying in the National Forests are those enacted by the Washington State Legislature. Every hunter and fisherman should familiarize himself with these laws, a copy of which will be furnished by the State game warden at Seattle, Wash.

Game and fish protective work is one of the regular official duties of all Forest officers, who are *ex officio* State game wardens.



A new regulation has recently been approved by the Secretary of Agriculture, which provides:

"The going or being upon any land of the United States, or in or on the waters thereof, within a National Forest, with intent to hunt, catch, trap, willfully disturb, or kill any kind of game animal, game or nongame bird or fish, or to take the eggs of any such bird, in violation of the laws of the State in which such land or waters are situated is hereby prohibited."

## HANDLING KILLED DEER

There are several ways of carrying a deer after killing. The following method is one used by a great many experienced hunters: After removing entrails, cut the skin around the legs close to the hoofs below the dewclaws, then split the skin of the leg to above the knee joint. Cut legs off at knee joint and skin out, then tie skin of legs together by tying skin of right foreleg to skin of left hind leg and vice versa. Then place the deer on a log or upper hillside, run arms through loops formed by tying legs, get them well up on the shoulders and rise. The deer will then hang crosswise on the back. The pack can be regulated for comfort by lengthening or shortening the leg ties.

For packing one deer on a horse the following will be found very simple: Take a small rope, place double half hitch over horn of saddle, place deer on it, belly down (and it is best to turn the legs slightly to the rear) and let the weight rest just back of the forelegs. Take a half hitch around flank with hitch underneath, then pass rope through cinch ring. Repeat on opposite side, putting hitch just back of forelegs. Balance the deer in saddle, tighten the ropes, and fasten them. The head and horns can be twisted around and tied to the horn of the saddle.

To skin a deer, swing it clear of the ground by the hind feet and then skin down. By this means the hide can be nearly pulled from the carcass after it has been started with a knife here and there, and the meat kept clean. To preserve the hide, stretch it over a log, a tree, or on the side of a building, flesh side out, until it is thoroughly dried, then it will keep and is easily packed.

If it is desired to preserve the head for mounting, the following simple method is satisfactory. Never cut the animal's throat if you wish to mount the head. If it is desired to bleed him, stick a knife in the breast at the base of the neck. To remove the skin from the head and neck, first slit the skin from one horn to the other

and carry the cut around the base of each horn. Then from the middle of the cross cut, carry a cut down the middle line of back of neck. The hide can then be removed from the head. Use common table salt to preserve the scalp. Lay the skin flesh side up and rub plenty of salt into all parts of it. Be careful to put plenty behind the ear cartilages and around the nose.

One of the hardest problems which confront the hunter after killing his deer is taking care of the meat, especially in hot weather when the flies are bad. It is a good idea to take two or three sacks along made from house lining or cheesecloth. These sacks should be made about 6 feet long by 2 feet wide. The hunter can carry one of these bags along when hunting. If a deer is killed, remove the entrails, hang it up so it will drain, and slip the bag over it; fasten it so flies can not get in. A deer can be left hanging in this manner and brought to camp on a horse later. The same method should be adopted after the deer has been skinned in camp. Late in the season when the nights are cool, by keeping flies off in this manner, a deer can be kept fresh for several days, and in some cases for a week or two.

Nearly every hunter has his own ideas about making "jerky." The meat should be cut into strips from 2 to 3 inches thick and dipped in boiling hot brine. Build a rack with long sticks (wire screen is better), smoke with green maple or other hardwood until the meat is seared over so flies will not bother. After this it is best to dry it in the sun as much as possible. When smoking, do not allow the fire to blaze or the meat will be cooked instead of jerked.

## CODE OF LOST AND DISTRESS SIGNALS

When a man is lost or injured and needs help, a signal by shooting should be given. The lost and injured signal is the firing of a gun twice, with an interval of 10 seconds between and one single shot 60 seconds later. If no answer is received, this signal should be repeated after an intermission of 5 minutes. The answer to this signal will be one single shot from the rescuing party, followed by a recognition shot from the lost man.

Care should be taken to get the time between shots as accurate as possible. In the absence of a watch the time can be very accurately judged by counting 10 between the first and second shots and 60 between the second and third shots. Hunters should keep in mind this signal and, if possible, avoid giving it when shooting at game.

The person who is lost should, after hearing an answer to his signal, remain at the place where he gave the signal until the rescuing party arrives; otherwise he may take the opposite direction and not be found at all.

To prepare for an emergency, every hunter or fisherman should carry in his pocket a piece of candle and matches in a water-tight match safe, so that, in case he should get lost or injured, he can readily start a camp fire.

## ACCIDENTS

Preliminary treatment is described for the following more common accidents:

**DROWNING.**—Remove clothing from upper part of body. Lay patient face down and empty lungs of water by lifting the body by the middle. Then place the patient on his back. Put your finger well back in his throat and clear out mud, leaves, etc. Pull and hold tongue forward with dry handkerchief. To induce artificial respiration kneel at the patient's head and grasp arms below the elbow. Alternately raise both arms upward and backward over the head, making the elbows almost touch the ground; then bring them down again, pressing them against the sides and front of chest. Repeat about 15 times a minute, and continue for at least an hour and a half. As soon as natural breathing begins, give stimulants and warm drinks by teaspoonfuls.

**WOUNDS.**—Reduce the flow of blood by applying cold water, snow, ice, or poultice; also by elevation of the part injured. If an artery is cut so that the blood spurts in jets, stop flow of blood by pressing against bone or muscle. If injury is to limb, tie band tightly around it near the wound and between the wound and the heart.

**SUNSTROKE.**—Get patient in shade at once. Lay him on his back and apply cold water to head and neck. Do everything possible to reduce temperature of body and rapidity of pulse.

**MAD-DOG OR SNAKE BITE.**—Apply a tourniquet between the wound and heart, loosening it from time to time. Suck wound, but be sure you have no open cuts or sores on lips or mouth. In snake bite a heart stimulant should be administered. A good treatment consists of hypodermic injections of potassium permanganate near the puncture; also give strychnine hypodermically or in tablets to keep up heart action.



PTOMAINES POISONING.—Ptomaines are a common source of poisoning and most frequently occur in canned meats, fish, etc. An effort must be made at once to empty the stomach by vomiting, which may be induced by tickling the throat with feather or finger, or drinking warm water with mustard. Laxatives, such as Epsom or Rochelle salts or castor oil, should be given freely. Stimulants should be given and heat and rubbing applied after the elimination of the poison.

## ADMINISTRATION OF THE NATIONAL FORESTS

Simplicity is the principal characteristic of the Forest Service organization. No red tape is allowed to interfere with the efficiency of the men in the field. Each National Forest is in direct charge of a forest supervisor, with headquarters in a town conveniently near the Forest, and is divided into ranger districts, each in charge of a forest ranger. A large part of the business of the Forest can be carried on with the rangers, and most of the rest with the forest supervisors. The larger questions of policy and administration are referred to the district forester.

The timber that is mature and ready for cutting is offered for sale to the highest bidder. When a sale is made, the trees to be cut are marked by a Forest officer, provision being made for the preservation of the young growth and the perpetuation of the Forest. The purchaser of National Forest timber is required to dispose of the logging slash in such a way as to prevent its becoming a fire menace.

As the result of great forest fires there are here and there on the National Forests large burns which are completely deforested and which can be reclaimed only by the artificial planting or sowing of small trees. Such areas the Forest Service is reclaiming by planting young trees grown in the Service nurseries. About 1,500,000 small trees are planted annually in the National Forests of Washington.

On most of the National Forests there are areas suitable for the grazing of sheep or cattle. These are allotted to the sheep and cattle men for a regular fee of so much per head of stock. On the open forests of eastern Washington, where there are large areas of bunch grass in the yellow pine timber, sheep and cattle are grazed under Forest Service permit and supervision. The nutritious forage is thus utilized for the production of meat, wool, and hides, and the danger from fires spreading in the forests is thus greatly reduced.

Settlers who live within or near a Forest are allowed to graze a small number of domestic stock free of charge. Care is taken to see that each settler and stockman gets his fair allotment of range, and that the range is not overgrazed and spoiled for the next grazing season.

The greatest menace to the forest is fire, and the Federal Government spends annually on the National Forests of Washington about \$60,000 for patrol work and from \$5,000 to \$80,000 for actual fire fighting. On each of the Forests in Washington there are one or more lookouts who are stationed on the higher peaks and ridges. Upon these the Forest Service depends for the speedy discovery of fires. It is intended that all parts of every Forest shall be under constant observation during the summer season. The lookout is housed in a small cabin and provided with field glasses and instruments for determining the location of fires. Telephone lines enable him to report the fire to the district ranger. Once a fire is discovered and located, it is the business of the ranger to put it out. Tools are always ready at the ranger stations and in special boxes at strategic points in the Forest. The ranger and his assistants are always ready for prompt action, and the majority of fires are reached and extinguished inexpensively by a small crew before they spread to large proportions. If the fire is too large for the ranger to handle, the Forest supervisor takes charge and by means of plans made in advance is able to secure on short notice experienced crews of fire fighters, transportation, and large supplies of tools and equipment and food for the men who may have to spend a week or more on the fire line. The greatest energies of the Forest Service are directed to the prevention and suppression of fires.

For the purpose of making the timber more accessible, for facility in getting to fires quickly, and for opening up the Forest to the people, the Forest Service has built, in all the National Forests, a total of 4,419 miles of roads and 23,239 miles of trail. Ten per cent of the receipts from timber sales, grazing fees, etc., is used for building roads and trails for the benefit of the public, and another 25 per cent of the receipts is paid to the States by the Federal Government for the benefit of county schools and roads. The appropriation in 1916 by Congress of \$10,000,000 to be used at the rate of \$1,000,000 a year and the appropriating in 1919 of \$3,000,000 a year for three years for the construction of National Forest roads, will make possible the building of roads on a much larger scale than has hitherto been possible.

WASHINGTON GAME LAWS, 1920

OPEN SEASONS.<sup>1</sup>

*West of Cascades.*

	Dates inclusive.
Deer (see exceptions), goat.....	Oct. 1-Nov. 1.
Exceptions: Deer in Island and San Juan Counties, Jan. 1, 1921; does in Skagit, Snohomish, and Whatcom Counties, no open season.	
Bear.....	Sept. 1-May 1.
Quail, ruffed grouse, native pheasant, Chinese pheasant (see exception), blue grouse, ptarmigan.....	Oct. 1-Oct. 15.
Exception: Chinese pheasant in Clallam, Kitsap, and Skamania Counties, no open season.	
Duck, goose, brant, coot.....	Oct. 1-Jan. 15.
Black-bellied and golden plovers, Wilson snipe or jacksnipe, yellowlegs.....	Oct. 1-Dec. 15.
Rail.....	Oct. 1-Nov. 30.

*East of Cascades.*

Deer (Kittitas County, Oct. 15-Dec. 1).....	Oct. 1-Nov. 15.
Bear.....	Sept. 1-May 1.
Goat.....	No open season.
Ruffed grouse (native pheasant), blue grouse (see exceptions).....	Sept. 1-Nov. 15.
Exceptions: In Asotin County (in precincts of Clarkston, South Clarkston, and West Clarkston, no open season), Garfield, and Walla Walla, Aug. 15-Oct. 1. <i>Ruffed grouse</i> in Columbia, Kittitas, and Yakima Counties, no open season. <i>Blue grouse</i> in Columbia County, no open season; in Spokane County, Oct. 1, 1919.	
Quail in Counties of Asotin (in precincts of Clarkston, South Clarkston, and West Clarkston, no open season), Garfield, and Walla Walla.....	Oct. 1-Oct. 10.
Prairie chicken in Stevens County.....	Sept. 15-Oct. 1.
Prairie chicken in Ferry and Okanogan Counties.....	Sept. 15-Nov. 1.
Sage hen, Hungarian partridge, male Chinese and English pheasants in Kittitas County.....	Oct. 1-Oct. 10.
Bob-white quail in Spokane County.....	Oct. 1-Nov. 1.
Hungarian partridge in Lincoln, Spokane, and Stevens Counties.....	Oct. 1-Nov. 15.
Chinese pheasants in Benton, Stevens, and Yakima Counties.....	Oct. 1-Oct. 15.
Duck, goose, brant, coot.....	Sept. 16-Dec. 3.
Black-bellied and golden plovers, Wilson snipe or jacksnipe, yellowlegs.....	Oct. 1-Dec. 15.
Rail.....	Sept. 16-Nov. 3.

<sup>1</sup> *Washington*: County game commission, with consent of State warden, may shorten, close, or open season of upland game birds.



NO OPEN SEASON.<sup>1</sup>

Moose, elk (1925); fawns, caribou, mountain sheep, squirrels (gray, black, fox), quail, prairie chicken, sage hens, introduced birds (except as above), turkey, and dove; swans, wood ducks, eider ducks, auklets, auks, bitterns, little brown and sandhill cranes, fulmars, grebes, guillemots, gulls, herons, jaegers, loons, murre, petrels, band-tailed pigeons, puffins, shearwaters, terns, and all shore birds (except Wilson snipe or jacksnipe, black-bellied and golden plovers, and yellowlegs).

HUNTING AND FISHING LICENSES.

Nonresident: Hunting and fishing, State, \$10; fishing, county, \$2. Resident: State, \$5; county, \$1. Issued by county auditors.

No license required of honorably discharged Union soldiers of Civil War to hunt or fish, or of women and persons under 16 to fish, if residents.

BAG LIMITS AND POSSESSION.

One deer in counties east of Cascades. Two deer (1 buck in Skagit, Snohomish, and Whatcom), 1 goat in counties west of Cascades. Five in all of partridge, grouse, prairie chickens, Hungarian partridge, Chinese or English pheasant a day or in possession; 10 quail a day, 10 upland birds, but in no event to include more than 5 upland birds other than quail, and 25 in all of upland birds a week. In Kittitas County 2 male Chinese or English pheasants in bag of 5 upland birds; 20 ducks, geese, brant, golden plover, yellowlegs, Wilson snipe a week (week ends at midnight Saturday), but not more than 8 geese, 8 brant, 15 in all of plovers and yellowlegs a day; 30 ducks, geese, brant in possession; 50 sora and 25 in all of other rails, coots, and gallinules. Possession during close season permitted under permit, but migratory birds shall not be possessed longer than the first 10 days after close of open season.

SALE.

Sale of all protected game prohibited.

EXPORT.

Export of all protected game prohibited.

<sup>1</sup> *Washington*: County game commission, with consent of State warden, may shorten, close, or open season on upland game birds.

## *Six Rules For Sportsmen*

1. *Be a real sportsman.*—There is more honor in giving the game a square deal than in getting the limit.
2. *Make sure it's a buck.*—If you can't see his horns—she hasn't got any.
3. *Help to enforce the game law.*—Game and fish are public property and only a game hog will take more than his fair and legal share. Violations should be reported to the nearest deputy warden, Forest ranger, or game protective association.
4. *Respect the ranchman's property.*—He regards the man who leaves his gates open, cuts his fences, disturbs his live stock, or shoots near dwellings, as an outlaw. Put yourself in his place.
5. *Be careful with your camp fire and matches.*—One tree will make a million matches; one match can burn a million trees.
6. *Leave a clean camp and a clean record.*—Unburied garbage, crippled game, and broken laws are poor monuments for a sportsman to leave behind him.

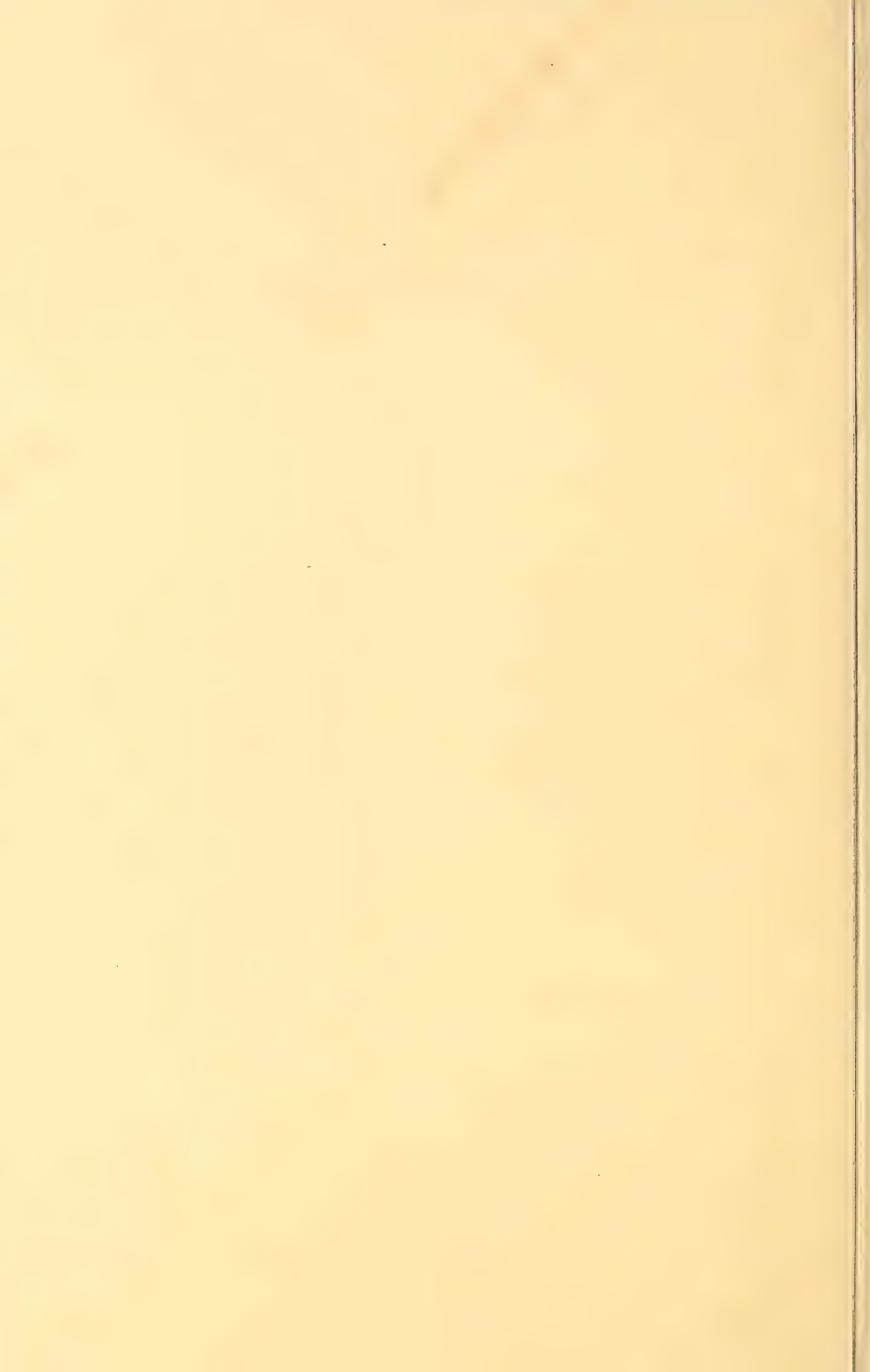
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